New! Monthly Column On Programming Tricks

$2.50

ELECTRONIC FUN with COMPUTERS AND GAMES

ICD08274 JANUARY 1984 VOL. 2 NO. 3

1984

Orwell's Vision vs. The Real Thing

Win a Starpath Supercharger

BIG BROTHER, WATCH OUT!!!
Riley

"Make note of that name, Electronic Arts. It may well set the standard for sophisticated entertainment software in the '80's."

—Creative Computing.

ELECTRONIC ARTS COMES TO THE COMMODORE.

ARCHON™

by Free Fall Associates

"No review could possibly do more than hint at the manifold excellence of Archon. It is truly a landmark in the development of computerized strategy games." —Video

"...you're bound to fall for it. Imagine a chess game in which you can cast spells."

—Creative Computing

"...the offices of A.N.A.L.O.G. echo with the searing roar of dragon-fire and shouted obscenities from angry players. Archon turns friend against friend and inspires grudges that can last for days. What better compliment can you give to a computer program."

—A.N.A.L.O.G.

HARD HAT MACK
MICHAEL ABBOT & MATTHEW ALEXANDER
BONUS :04100 SCORE :00100 HI-SCORE :00465

C64, Ap, At

HARD HAT MACK™

by Michael Abbot and Matthew Alexander

"An outstanding, state-of-the-art game. Hard Hat Mack is the blue collar hero of this three screen climbing game and his tasks are far from simple."

—Arcade Express

"If you put Hard Hat Mack in the ring with all other games on the market, it would win most bouts in the opening seconds of the first round. It's that good."

—Softalk

ARCHO
BY ANNE WESTFALL AND JON FREEMAN & PAUL REICHE II
THE LIGHT AND THE DARK
ARCHON

C64, Ap, At

Ap, C64, At, signify availability for Apple II, II+, IIE, Commodore 64, or Atari home computers with disc drive. All screen shots represent Commodore 64. Apple is a registered trademark of Apple Computer, Inc. Commodore 64 is a registered trademark of Commodore Business Machines, Inc. Atari is a registered trademark of Atari, Inc., a Warner Communications Company.

MURDER ON THE ZINDERNEUF™

by Free Fall Associates

"Whodunit fans, drop your Agatha Christie and come running. This is your game! The graphics are among the most colorful and attractive I have seen in any game." —Antic

THE MURDER ON THE ZINDERNEUF
BY ROBERT LEYLAND AND PAUL REICHE III & JON FREEMAN
Dining Room
Donald Stonewane is missing. The authorities could use your assistance.

C64, At

M.U.L.E.™

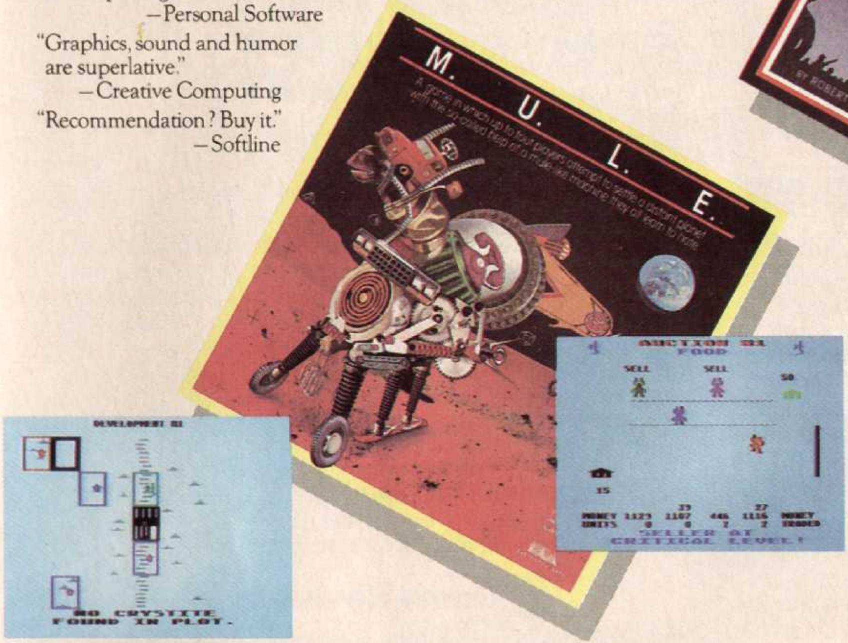
by Ozark Softscape

"A must-have."
—Electronic Fun

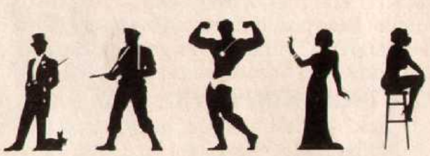
"May well become the Monopoly of computer games."
—Personal Software

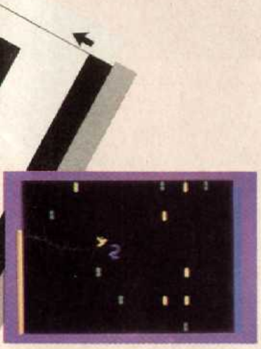
"Graphics, sound and humor are superlative."
—Creative Computing

"Recommendation? Buy it."
—Softline


M. U. L. E.
AUCTION 11
FOOD
SELL
SELL
MONEY
UNITS
SELLER AT CRITICAL LEVEL!
DEVELOPMENT III
NO CRYSTITE FOUND IN PLOT.

C64, At





PINBALL CONSTRUCTION SET™

by Bill Budge

"The best program ever written for an 8-bit machine."
—Steve Wozniak

"A fully integrated graphics-oriented design tool that lets you create your own video pinball games, required study for all serious software authors."
—A.N.A.L.O.G.

"A tour de force."
—Creative Computing

Bill Budge
Pinball Construction Set

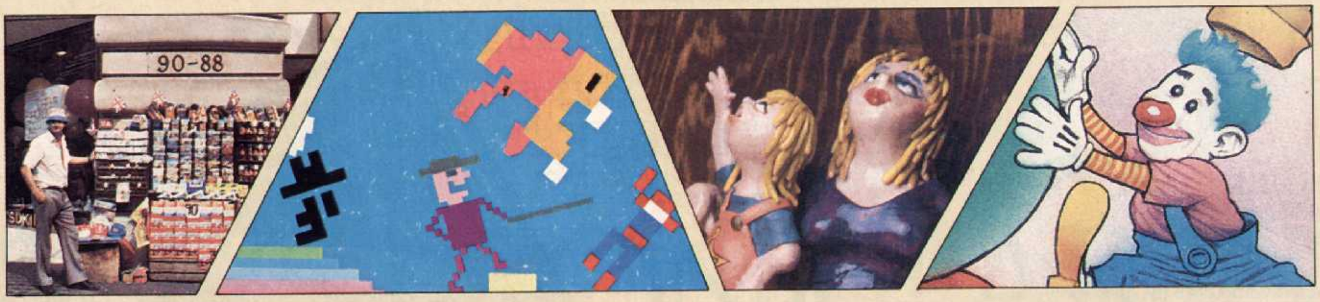
C64, Ap, At

ELECTRONIC ARTS

Home Software for the Commodore 64

Look for our other Commodore 64 titles like AXIS ASSASSIN,™ WORMS?™ and THE TESSERACT STRATEGY™ at your favorite computer store, software center and at fine department stores throughout the country. For more information about these and other Electronic Arts products, write or call us at 2755 Campus Drive, San Mateo, CA 94403 – (415) 571-7171.

VOLUME TWO, NUMBER THREE • CONTENTS • *JANUARY 1984*



ELECTRONIC FUN
with COMPUTERS AND GAMES

Special Reports

1984: BIG BROTHERHOOD YEAR *By Suzan D. Prince* Well, it's here: The year of George Orwell's futuristic and bleak novel. But just how prophetic was Orwell and how close is his 1984 to the real 1984? Find out in this special report and, remember, Big Brother may be watching you **26**

MAY THE FORTH BE WITH YOU *By Dan Azulay* Popping on the stack? It's not a sequel to "Puttin' On The Ritz." It's one of the fundamental principles of FORTH, a language so fast it makes BASIC look like it's standing still **32**

THE UNKNOWN ARCADER: THE ARCADES OF LONDON *By "UA"* How popular are arcades in jolly old England? Well, let's just say that when 4:00 rolls around, no one goes home for tea and scones **36**

HOW TO MAKE A MILLION, PART II *By David Tuller* The world's a computer and most of the people merely players. As the number of people who own computers grows, so does the need for good computer programs and you can't be a millionaire without a program. In this follow-up story, *EF* tells you about all the new outlets through which you can sell your wares **44**

YOUR GAME OF GAMES Five lucky *EF* readers will win their own Starpath Supercharger and a library of Starpath games. But you need to be a good judge of "character" to succeed **48**

Cover Illustration: Frank Riley

Regular Features

SCREENPLAYS: KRULL AND CHAMPION BASEBALL *By Michael Blanchet* In baseball, you've got gloves and in *Krull* you've got Glaives. Michael Blanchet tells you how best to use them to become a hero........ **8**

GAMEMAKERS: JUMPMAN OF THE YEAR *Interview by Phil Wiswell* You think *your* life is full of ups and downs? Try being Jumpman or Jumpman Jr for a day. Read about how they were created by Epyx designer Randy Glover **77**

COMPUTER WORKOUT: THE TIMEX SINCLAIR 2068 *By Jules Gilder* As fast as a speeding BASIC. More powerful than the TS 1000. Able to make the quantum leap to color graphics. You don't have to look up in the sky to appreciate the latest Timex computer........ **80**

HACKER'S HELPER: CREATING CUSTOM CHARACTERS *By Robert Alonso* Turn those unwanted letters of the alphabet into useful aliens. This is the first article of our new monthly series designed to give amateur programmers inside tips on how to really utilize the power of your home computer **73**

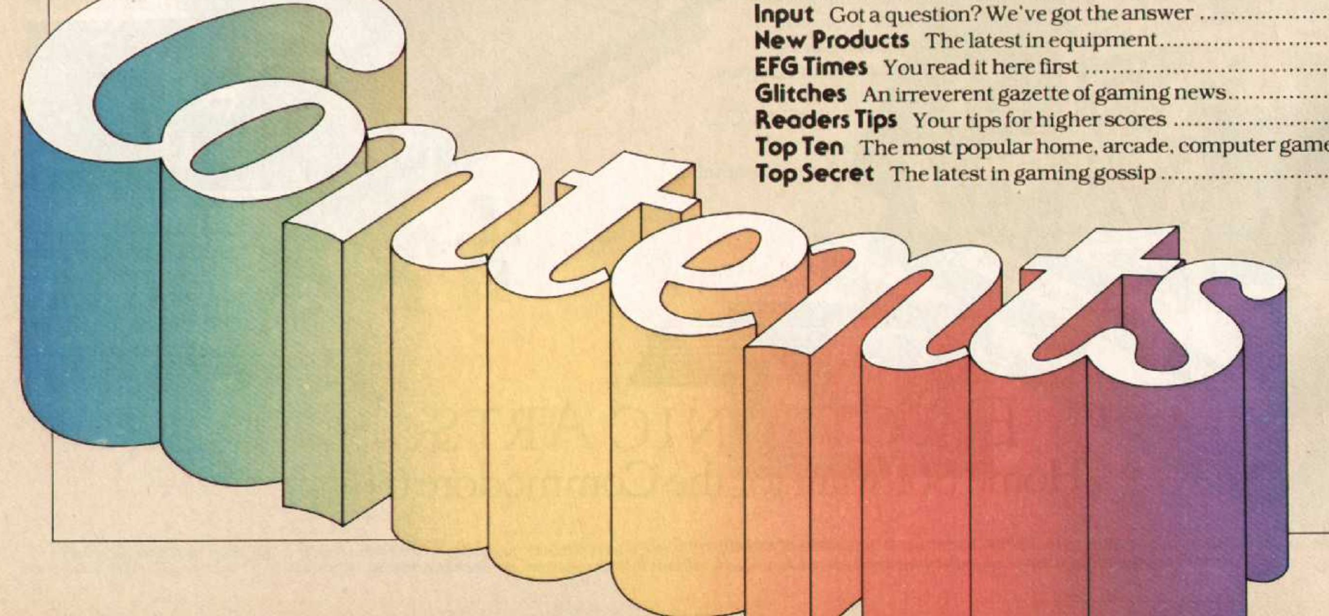
FIRST SCREENING: THREE-IN-A-ROW You may think this is just another ho hum Tic-Tac-Toe but there's more strategy and fewer X's and O's to Robert Heldt's game than meets the eye **85**

Game Reviews

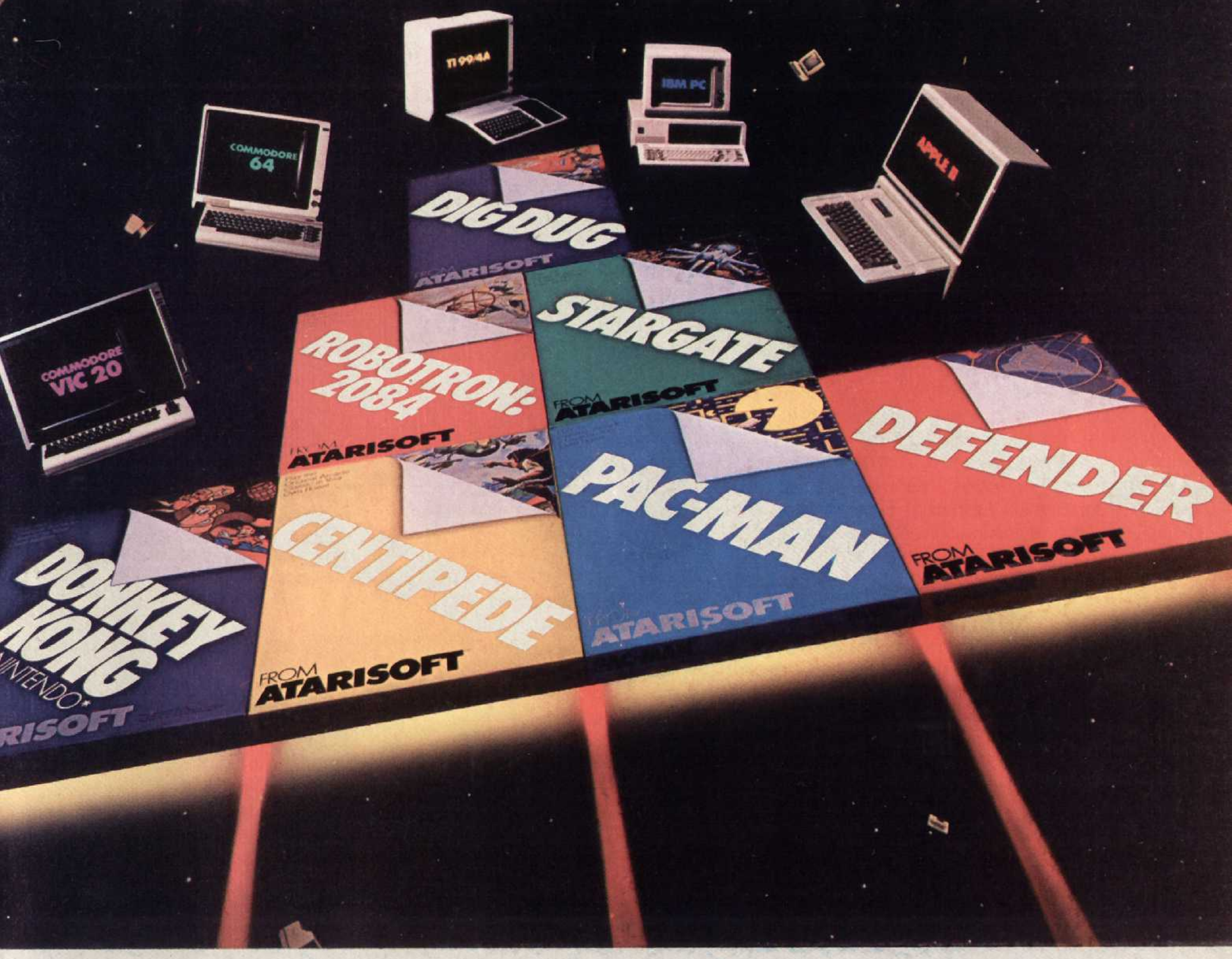
HITS & MISSILES George Kopp gets up *before* the countdown in Coleco's *Rocky* and goes up *after* the countdown in Activision's *Space Shuttle*; Michael Brown enters no man's land in *Battlezone*; Michael Sheinbaum gets the jump on in *Springer*; Marc Berman can't find the scrolling graphics in Intellivision's *Zaxxon*; Randi Hacker goes with the floes in *Frostbite*. Plus computer games; Phil Wiswell finds that Pledge doesn't work on *Moondust* and Randi Hacker battles Mordo the Spaz while Rome watches in *The Last Gladiator* and more ... **50**

Departments

Editorial A word from the editors **4**
Letters We welcome your feedback **6**
Input Got a question? We've got the answer **10**
New Products The latest in equipment........ **14**
EFG Times You read it here first **16**
Glitches An irreverent gazette of gaming news........ **20**
Readers Tips Your tips for higher scores **75**
Top Ten The most popular home, arcade, computer games **76**
Top Secret The latest in gaming gossip **96**



NOW YOUR COMPUTER FITS THE ORIGINAL ARCADE HITS.



Now the excitement of original arcade graphics and sound effects comes home to your computer.

Introducing ATARISOFT.™ A new source for computer software.

If you own a Commodore VIC 20 or 64, a Texas Instruments 99/4A, an IBM or an Apple II, you can play the original arcade hits.

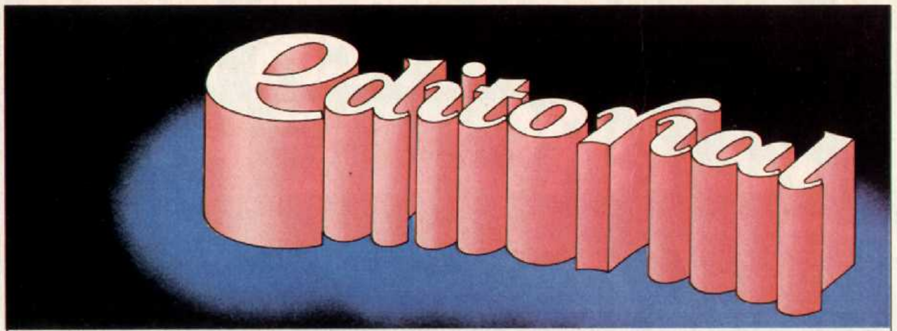
DONKEY KONG by Nintendo CENTIPEDE,™ PAC-MAN, DEFENDER, ROBOTRON: 2084, STARGATE and DIG DUG. (On the TI 99/4A you can also play Protector II, Shamus, Picnic Paranoia and Super Storm.)

So, start playing the original hits on your computer. Only from ATARISOFT.

Some games also available on ColecoVision and Intellivision.

ATARISOFT™
Now your computer fits the arcade hits.

DONKEY KONG, Mario and NINTENDO are trademarks and © Nintendo 1981, 1983. PAC-MAN and characters are trademarks of Bally Midway Mfg. Co. sublicensed to Atari, Inc. by Namco-America, Inc. DEFENDER is a trademark of Williams Electronics, Inc., manufactured under license from Williams Electronics, Inc. ROBOTRON: 2084 is a trademark and © of Williams 1982, manufactured under license from Williams Electronics, Inc. STARGATE is a trademark and © of Williams 1981, manufactured under license from Williams Electronics, Inc. DIG DUG is created and designed by Namco Ltd. manufactured under license by Atari, Inc. Trademarks and © Namco 1982. PROTECTOR II is a trademark of Synapse Software Corporation, manufactured under license by Atari, Inc. SHAMUS is a trademark of Synapse Software Corporation, manufactured under license by Atari, Inc. PICNIC PARANOIA is a trademark of Synapse Software Corporation, manufactured by Atari, Inc. SUPER STORM is engineered and designed by Synapse Software Corporation, manufactured under license by Atari, Inc. ATARISOFT™ products are manufactured by Atari, Inc. for use on the above referenced machines and are not made, licensed or approved by the manufacturers of these machines. COMMODORE 64, VIC 20, TEXAS INSTRUMENTS 99/4A, IBM, APPLE, COLECOVISION and INTELLIVISION are respectively trademarks of Commodore Electronics Limited, Texas Instruments, International Business Machines Corp., Apple Computer, Inc., Coleco Industries, Inc. and Mattel, Inc. A Warner Communications Company.
© 1983 Atari, Inc. All rights reserved.



The year of Big Brother

To millions of people all over the world, the year 1984 is a milestone of dread. George Orwell's classic novel depicting a totalitarian state of epic proportion continues to grip readers with its diabolical plausibility. As computers became more and more powerful, commentators never seemed to tire of making comparisons between what they saw as the coming technocracy and the society depicted in 1984. What they never foresaw, however, was that computers would be available to so many ordinary citizens—just about anyone, in fact. In this issue Suzan Prince takes a close look at Orwellian society and sees just how close—or far away—it is from the reality of life in 1984 and beyond.

We're also proud to inaugurate a new monthly column, Hacker's Helper by Robert Alonso. Robert, a freshman at Rutgers University, bought a VIC-20 just over a year ago and quickly taught himself programming. He did such a good job teaching himself (he's writing a book on the subject for Hayden) that we thought he could teach our readers a thing or two. Some of you may remember Spider, *Robert's First Screening game in our August issue, which began this very happy collaboration.*

And once you've mastered computer programming all you have to do is sell your software. Back in February David Tuller wrote a very popular article on selling your games, and we asked him to do a follow-up for this issue. If you just like to play them, though, maybe the Unknown Arcader's more your style. This month he checks out the arcades of London, England. Electronic Fun *always gives you something completely different.*

Fun & Games Publishing Inc. President: Richard Ekstract. Executive Vice President: Joseph D. Giarraputo. Controller: Neil Rose.

Advertising Offices East Coast: Zoe Aquilla, William O'Brien, 350 East 81st St., New York, NY 10028 (212) 734-4440. West Coast: Shelley Funes, 3757 Wilshire Blvd., Suite 202, Los Angeles, CA 90010. (213) 380-0996. Paul Magier, 2133 Stockton, Suite D307, San Francisco, CA 94133. (415) 392-8170.

Electronic Fun with Computers and Games USPS-699-750 (ISSN0746-0546) is published monthly by Fun & Games Publishing Inc., 350 East 81st Street, New York, NY 10028 (212) 734-4440. Annual (12 issues) subscription rate for U.S. only is $18.00. Add $4.00 for Canadian and $20.00 for foreign orders. Payment, (VISA, Master Card, check or money order) may accompany all orders. Second-class postage paid at New York, NY and at additional mailing offices. Postmaster send change of address to: *Electronic Fun with Computers and Games*, P.O. Box 947, Farmingdale, NY 11737.

ELECTRONIC FUN
WITH COMPUTERS AND GAMES

Publisher and Editor-in-Chief
RICHARD EKSTRACT

Associate Publisher
WILLIAM O'BRIEN

Editor
GEORGE KOPP

Managing Editor
RANDI HACKER

Senior Editor
WILLIAM MICHAEL BROWN

Contributing Editors
ROBERT ALONSO, MARC BERMAN, MICHAEL BLANCHET, JULES H. GILDER, MARK TROST

Copy Editor
LOUISE KOHL

Art Director
MARJORIE CRANE

Associate Art Director
VICKI GORDON

Assistant Art Director
FRAN FIFIELD, ANNMARIE AMARINO

Art Staff
DEBBIE KRIGER, DAVE KING, ANNIE RUSSINOF, HARRIET KORMAN

Production Director
CAROL VAN NATTAN

Production Assistant
KATHY MARQUIS

Typesetting
KATHLEEN MOONEY

Circulation Director
DAVID OBEY

Circulation Manager
EMELIA OLESON

Direct Sales Manager
KAREN LERNER

Assistant Circulation Manager
JUNE GRIFFIN

Circulation Promotion Manager
SHARON ANDORS

Advertising Director
ZOE AQUILLA

Advertising Sales Representative
DEBBIE SILVERBLANK

Eastern Sales Manager
COREY FRIEDMAN

Northwestern Sales Manager
PAUL MAGIER

Southwestern Sales Manager
SHELLEY FUNES

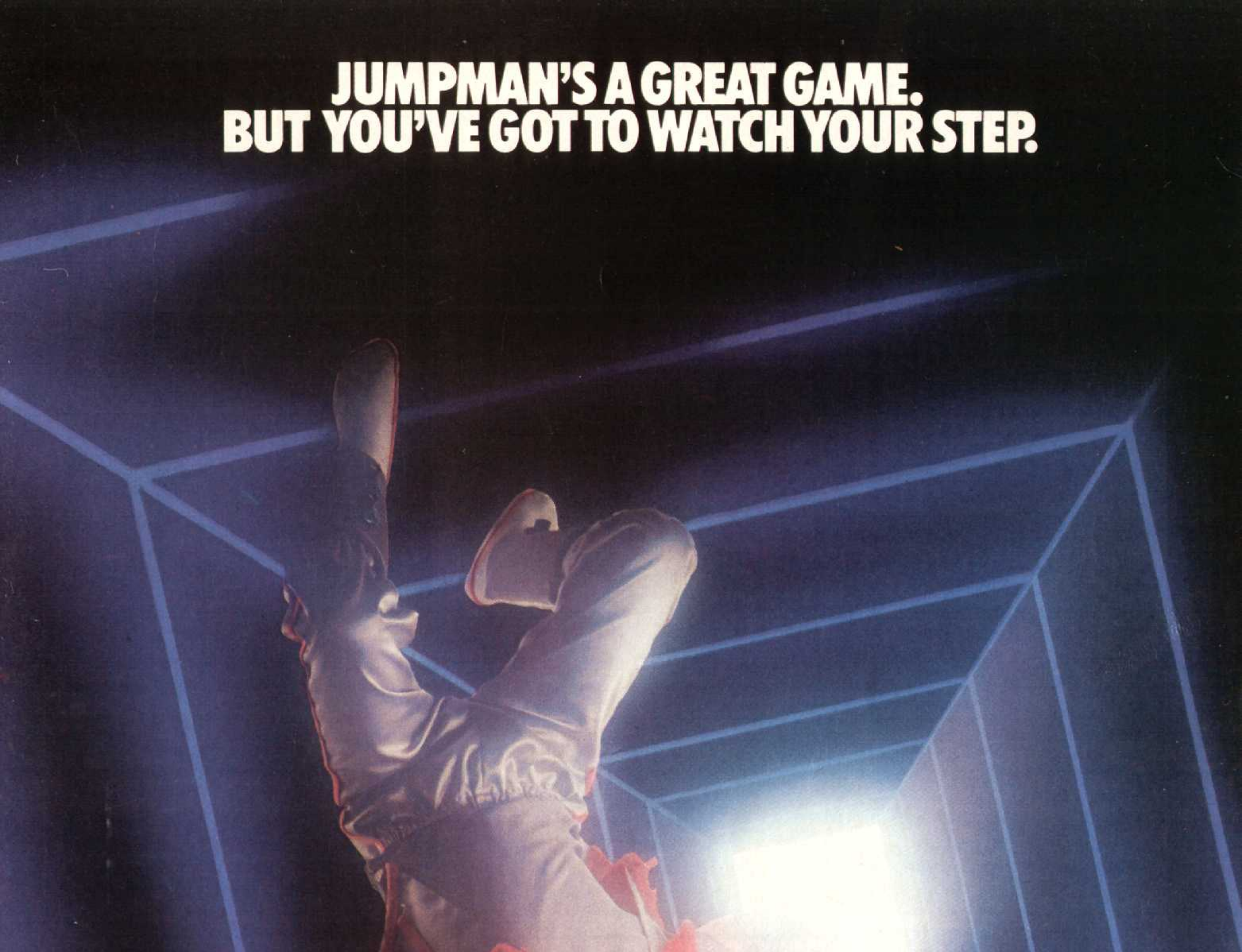
Advertising Coordinator
GREGG OCHS

Assistant Advertising Coordinator
NAN TEPPER

Sales Promotion Director
BRUCE KIMERER

© 1983 by Fun & Games
Publishing Inc. All rights reserved.
Printed in U.S.A.

JUMPMAN'S A GREAT GAME.
BUT YOU'VE GOT TO WATCH YOUR STEP.



Meet the Alienators. A fiendish bunch who've planted bombs throughout your Jupiter Command Headquarters.

Your job? Use your lightning speed to scale ladders, scurry across girders, climb ropes and race through 30 levels to defuse the bombs before they go off.

That's the kind of hot, non-stop action we've packed into the award-winning,* best-selling Jumpman,™ and into Jumpman Jr.,™ our new cartridge version with 12 all-new, different and exciting screens.

Both games force you to make tough choices. Should you avoid that Alienator, climb to the top and try to work your way down, or try to hurdle him and defuse the bombs closest to you before they go off?

If you move fast you'll earn extra lives. But if you're not careful, it's a long way down.

So jump to it. And find out why Jumpman and Jumpman Jr. are on a level all their own.

One to four players; 8 speeds; joystick control. Jumpman has 30 screens. Jumpman Jr. has 12 screens.

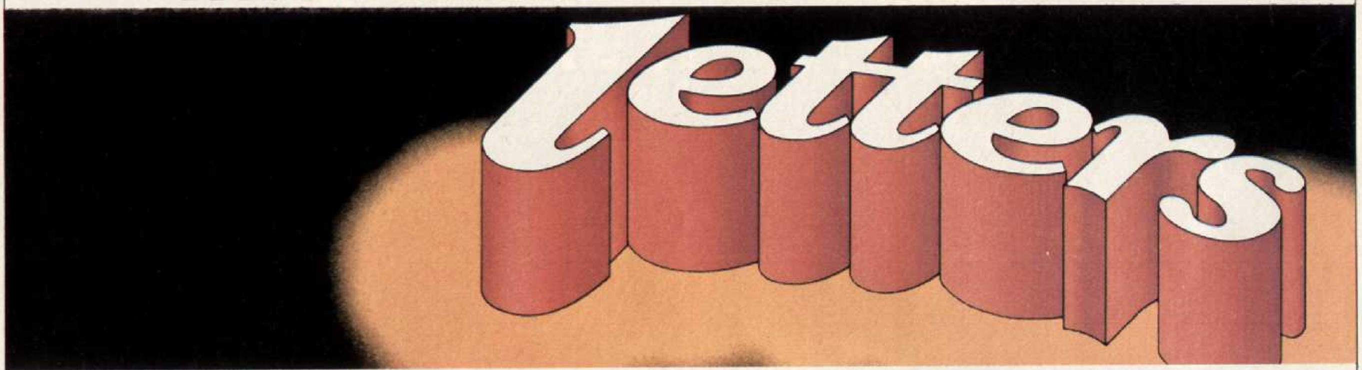
EPYX™ COMPUTER SOFTWARE

STRATEGY GAMES FOR THE ACTION-GAME PLAYER.

EPYX
JUMPMAN
EPYX
Jumpman Junior

---

*1983 C.E.S. award winner.



GAME MAKER

I've created three video games. If I wanted to send them to Atari or Parker Brothers or any of the other companies, what should I do? Should I write to them and maybe explain the game and draw pictures of it, or something else?

Jason Tyas
Beaumont, TX

Sorry, Jason, but just about the only way you can sell a video game to a big company these days is to give them a finished, already-programmed game they can play.

NOT RIGHT BACK

In your August issue you ran an article entitled "We'll Be Right Back..." about game commercials. It ran from page 46 to page 49, then dropped off. I never found the rest of the article. What happened?

Allen Lomax
Salinas, CA

Well, actually the dog ate it...no, wait, my little sister tore it up....In truth, Allen, the latter half of the article was lost due to a very weird production mishap and didn't make it into the magazine. Since the mishap was so weird, we feel it's safe to promise it'll never happen again (rest of this answer continued on page 152).

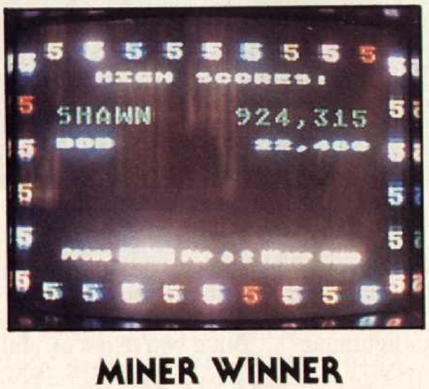
PLEASE REVIEW...

I don't like to ask for much, but is there a possibility that you could do reviews of *Wings* from CBS and *Turbo* for the Atari 2600? I've never found an inch on either in *EF*.

Peter McGlamery
Cleveland, OH

We did review the ColecoVision Turbo *way back in May of last year, but we haven't reviewed the VCS* Turbo *because to our knowledge there isn't one. We'll be reviewing* Wings *just as soon as we get a finished cart (we've only seen prototypes so far).*

0910059
CBS
FUEL
PWR
ASPD
ALT
310



HIGH SCORES!
SHAWN 924,315
BOB 22,460

MINER WINNER

I recently broke the 900,000 barrier on *Miner 2049er* for the Atari 800 (see photo). My score was 924,315. Is that a record, and if not, what is the record? Space doesn't permit me to tell my secret, but if any reader would like to know it, you can drop me a line at 3 Remer Ave., Springfield, NJ 07081.

Shawn Ayre
Springfield, NJ

The only documented high score we've seen on this one is Dave Dadabbo of Tampa, FL: Zone 4, Level 5, 185,955 points (registered with World Game Records, Box 338 Dayton, OH 45449). Unless we see another one soon, looks like you're the record-holder for now, Shawn.

FIRST TRANSLATIONS

I own a Commodore VIC-20. Steve Bender's September First Screening, *3-D Tunnels of Terror*, is written in Applesoft BASIC and I haven't been able to translate it into the BASIC that my computer understands. Could you please send me a translation of this program?

Gary E. Herndon
Knoxville, TN

We understand the problem, Gary, but we simply don't have the facilities to do translations for every game we run in First Screening. In many cases, the games simply won't translate for some computers, and we can't be unfair and do it for some and not for all. We do try to give each computer equal coverage in the section, but that depends on what we receive.

Write to us! We can't promise that we'll answer every letter, but we will read them all. We welcome your comments, advice and questions. Send your letters to: Electronic Fun, *350 E. 81st St., New York, NY 10028*

Tough competition.

STAR TREK
ARCADE
Video GAMES
Orpheum
BRUCE LEE
CONNECTION

The world may be short of oil. And short of jobs. But there's no shortage of entertainment. Arcades. Movies. Amusement parks. TV. Concerts. Records. You've got your choice. And every day, more of you are choosing HesWare™ computer games.

That's because only the best games earn the HesWare title. Tough, challenging, arcade quality action games like Gridrunner,™ Predator,™ Retro Ball,™ and Robot Panic.™

Mind-bending strategy and role playing adventures like Pharaoh's Curse™ and Oubliette.™

Zany new titles that have to be seen to be believed. Would you believe Attack of the Mutant Camels™??

You don't need an expensive computer to enjoy HesWare action, either. HesWare programs are available on cartridge, diskette or cassette for VIC 20,™ Commodore 64,™ Atari® and IBM® personal computers.

When you pick up a HesWare game, you know it's ready for the toughest test of all: beating out the tough competition for your attention.

HesWare games. Just one of the ways HesWare is expanding the computer experience. Look for them at your favorite software retailer.

Pleases the tough customer.

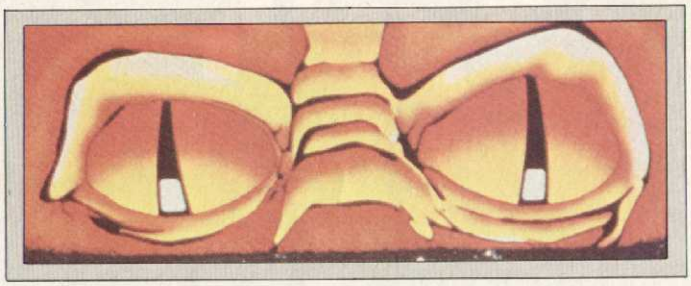
HesWare™

Human Engineered Software
150 North Hill Drive
Brisbane, CA 94005
800-227-6703
(in California
800 632-7979)
Dept. C20

VIC 20 and Commodore 64 are trademarks of Commodore Electronics Ltd. Atari is a registered trademark of Atari, Inc. IBM PC is a registered trademark of International Business Machines. Pharaoh's Curse is a trademark of Synapse Software. Oubliette is a trademark of ISA Software.

Cartridge for VIC 20
Gridrunner
Retro Ball
Synthesound
Cartridge for VIC 20
Turtle Graphics II
Gridrunner
Shamu
HES WR

© 1983



Krull and Champion Baseball:

By Michael Blanchet

KRULL

A game can never be as good as the movie it's named after—true or false? Before you answer, let's take a look back at some recent movie-inspired coin-ops: *Tron*—beat flick, great game; *Star Wars*—great movie, great game; and now *Krull*—an awful, forgettable, big-budget sci-fi box office flop, but darn good as a game.

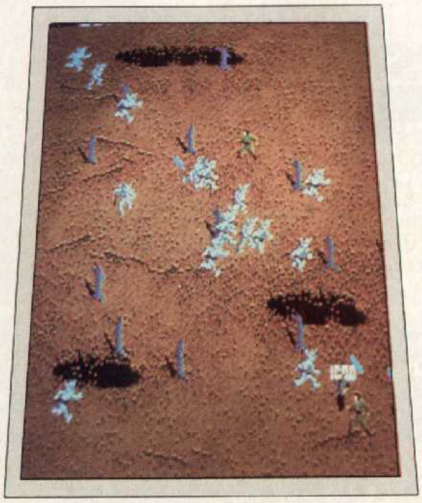
Like the other two, *Krull* is a multi-screen game. Before you can rescue the fair Princess Lyssa, you must first collect the pieces of your peculiar weapon, the Glaive, do battle with the Slayers, rescue your army (not once but twice), knock down the walls of a hexagonal fortress while fending off another army of Slayers, and finally sidestep a nameless beast and his fireballs. If you can survive all that, pat yourself on the back—you've just survived a full five-screen cycle of

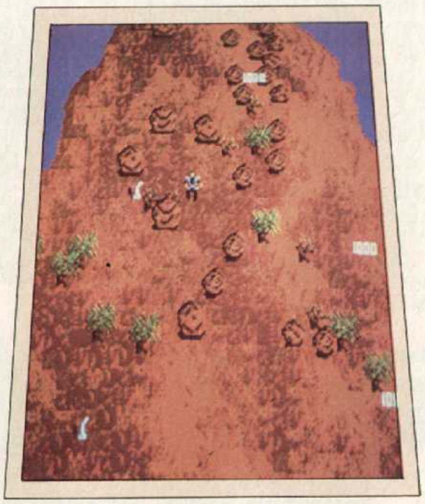
Krull.

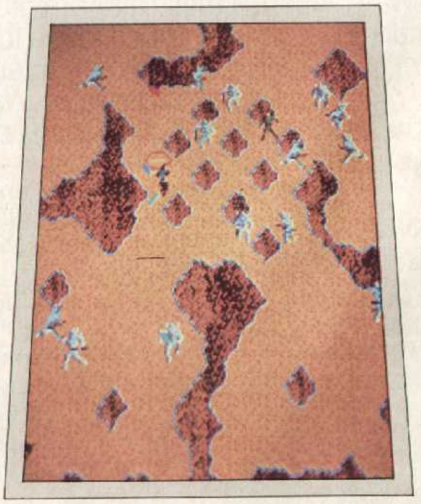
Your character, Colwyn, is controlled by a *Robotron*-like arrangement of two joysticks. The stick on the left makes him move, while the other tosses the Glaive. No special advice here—these sticks are among the most responsive I've ever used. One thing, though: each joystick functions in eight directions, a fact you won't find clearly stated anywhere on the game's cabinet. In fact, you won't find anything printed on the game's cabinet except the name *Krull* and the manufacturer's logo—the directions appear on screen at the beginning of each round of play.

In round one, the idea is to move Colwyn around the boulder-strewn countryside in search of the five blades that, when connected, form the Glaive. Not much to say here; your basic play should just involve avoiding the bouncing rocks. You can, if need be, walk between the boulders, but be careful—they have an annoying tendency to speed up unannounced. I found that going for the uppermost Glaive pieces first works best, since the boulders are sparsest at the outset of this round.

Round two is, in my opinion, the toughest test of the five. Here, Colwyn will be armed with four



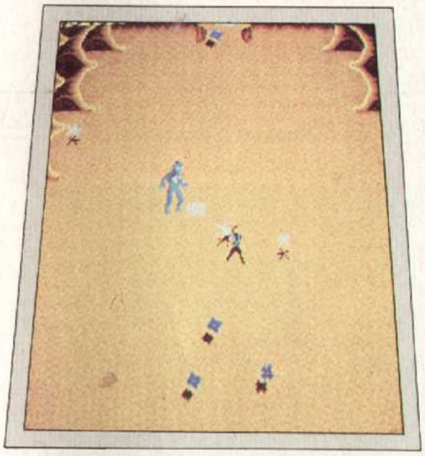




screen plays

Turning the double slay

Glaives, and to end the round he must kill each and every Slayer. For



extra points you can also run over (rescue) the members of your army who are scurrying about. My strategy is to remain at the bottom of the screen, all the while watching my flanks. Whenever a Slayer pops up, either on the left or the right, I toss a Glaive at him—it's far easier to handle a bunch of these demons when they're all in front of you.

Remember that Glaives are infinitely reuseable, but you only have four and, once thrown, they must either strike a target or bounce off one of the playfield borders before they'll return to you. With this in mind, you'll lessen the chances of being caught unarmed if you throw only when the target is real close to you.

In round three, the idea again is to rescue your AWOL army and then lead them to the fortress (you don't exactly have to lead them to it—once you rescue them, it'll come to you). Don't knock yourself out trying to skewer all the Slayers here; just kill the ones that pose an

Continued on page 94

CHAMPION BASEBALL

Unless you're next in line for Billy Martins' job, *Champion Baseball* is probably the closest you're ever going to get to managing a big-league team. One of the nicest touches of this game is that you can select the team you want to coach, so if you hate the Yankees or the Cubs, fine—there are fourteen other teams to pick from.

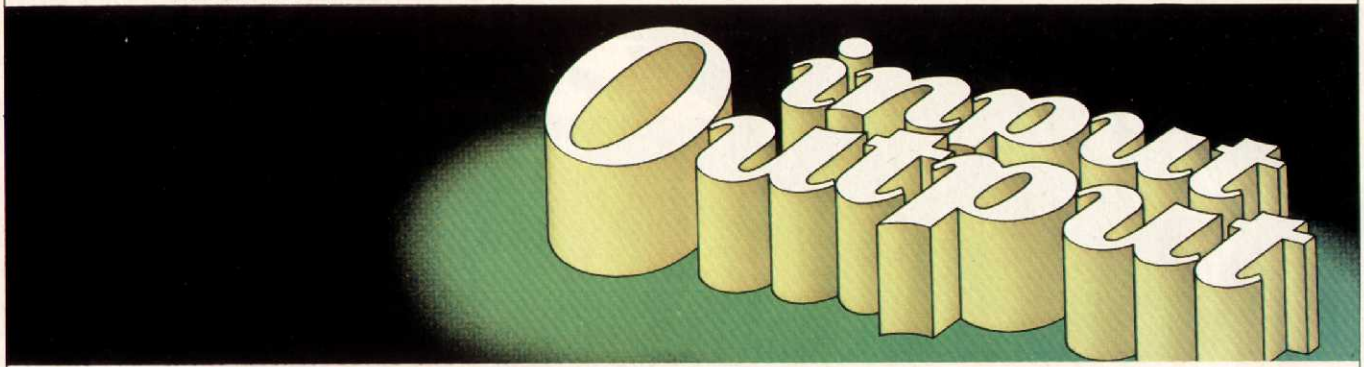
Don't depend on the team you pick to do the whole job for you, though. Since the computer allows you to pick first, the natural tendency is to pick the strongest possible team—but, for some reason, I found the Seattle Mariners played as well as the LA Dodgers. It may be that this business of selecting teams is just an attempt by Sega to personalize the game for players in different geographical locations. Whatever the reason, you'll generally find that your team selection has little or no bearing on the outcome of the actual game.

CHAMPION
Baseball
Baseball

Once you've given your team an identity, it's time to play ball. Being the visiting team, you'll bat first. When at bat the joystick is used to adjust the batter's stance. Move him close to the plate; by doing so, you'll shorten the strike zone and increase the chances of drawing a walk. When a pitch that's to your liking approaches, you can swing at it by tapping the red button. Tap early—these batters are a little slow on the draw. I found that a good time to swing is when the ball appears just above the player's head.

Since you can't exert any control over your fielders, the game is pretty much won and lost at the plate and on the mound. When it's

Continued on page 84

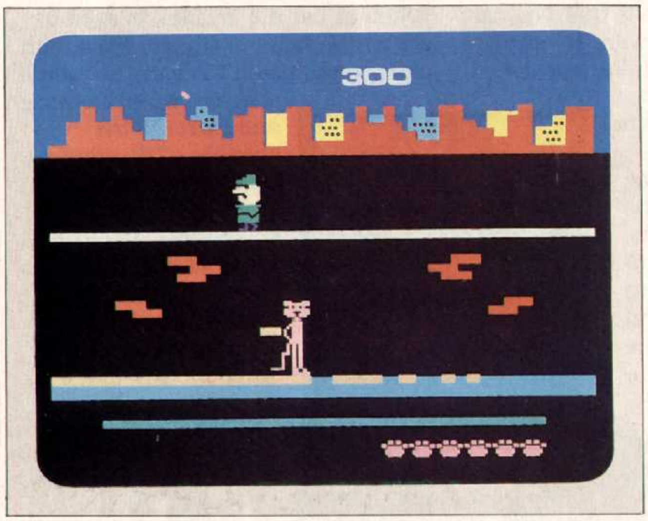


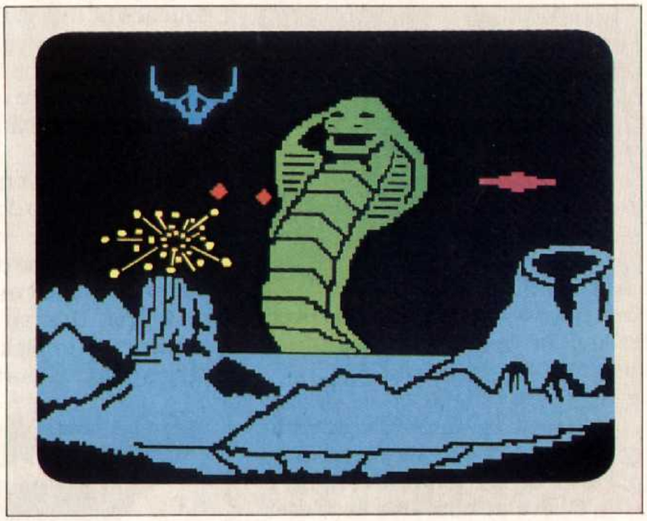
Odyssey's new Coleco plans

A couple of issues ago The Fly said that Odyssey was going to make cartridges for the ColecoVision system. Where are they? Do you know what titles they're going to make and, if so, do you have a picture of any of them? Are they any good?

Jeff Gomez
Cahuenga, CA

Odyssey initially planned to release four games in their "Probe 2000" series for ColecoVision (some of the games were also going to be made available for the Atari VCS, TI 99/4A, and other game systems and computers). Those first four carts were *Pursuit of the Pink Panther* (based on the movie adventures of Inspector Clouseau), *Power Lords: Quest for Volcan* (a shoot-em-up based on the Revell action-figure toys), *War Room* (an original World War III simulation) and *Lords of the Dungeon* (the earlier title was *Caverns and Creatures*). Unfortunately, the only one that you're going to be able to buy is *War Room*. There don't seem to be any more Probe 2000 carts planned at this time, and the first three have been permanently cancelled by Odyssey due to serious "technical problems" with the RAM chips in the carts. Odyssey won't expand on this explanation, and we can't explain it either—they all worked fine way back in September, when we got a chance to play some prototypes. Our picks were *War Room* (a finished cart was reviewed in the December issue), and *Lord of the Dungeon*, a fantastic *Wizardry*-style role-playing adventure game featuring a 2,500-room labyrinth, more than 140 different kinds of monsters, characters whose attributes change as they adventure, and a special battery-powered RAM chip that would let the cart remember the whole adventure even after it was unplugged from the console. We don't have a screen from *Dungeon*, but reproduced here are the opening screens from *Panther* and *Power Lords*.



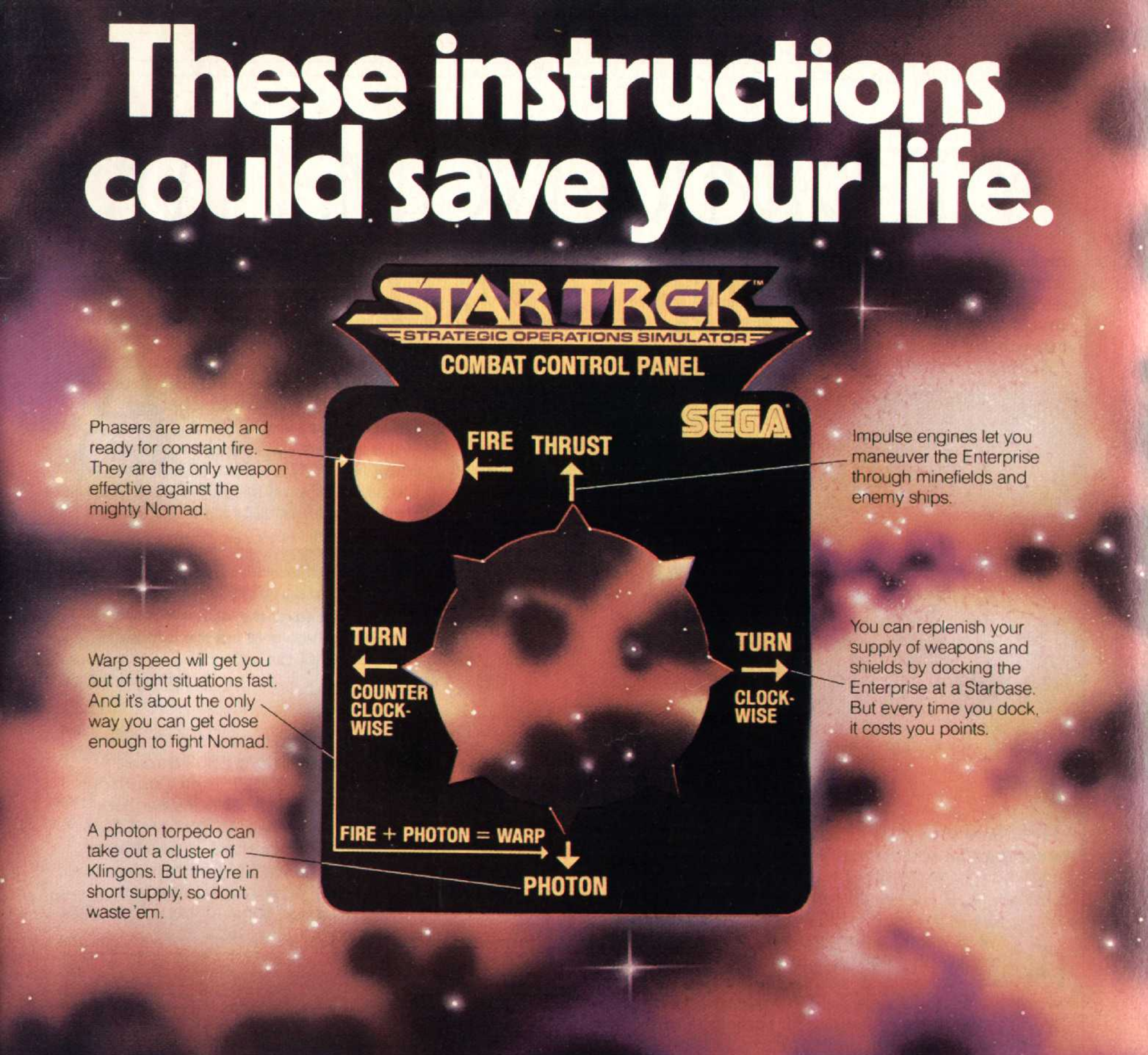


I am considering buying an Atari 5200, but I've heard that if you use the Pause button, it will make a permanent "print" of the game on your television screen! Is this true?

Mike Boxsusis
Clearwater, FL

No way, Mike. All of the Atari hardware—the VCS, the computers, and, of course, the 5200—contain a special circuit that begins randomly switching the colors of the game projected onto the screen if you fail to play after a minute or so. The inside of the face of your TV tube is painted with phosphors that glow when hit by an electron beam coming from the back of the tube; in color sets, these phosphors are divided up into different primary color spots that are hit (or "excited") at different rates to

These instructions could save your life.


STAR TREK
STRATEGIC OPERATIONS SIMULATOR
COMBAT CONTROL PANEL
SEGA
FIRE
THRUST
TURN
COUNTER CLOCK-WISE
TURN
CLOCK-WISE
FIRE + PHOTON = WARP
PHOTON

Phasers are armed and ready for constant fire. They are the only weapon effective against the mighty Nomad.

Impulse engines let you maneuver the Enterprise through minefields and enemy ships.

Warp speed will get you out of tight situations fast. And it's about the only way you can get close enough to fight Nomad.

You can replenish your supply of weapons and shields by docking the Enterprise at a Starbase. But every time you dock, it costs you points.

A photon torpedo can take out a cluster of Klingons. But they're in short supply, so don't waste 'em.

STAR TREK
STRATEGIC OPERATIONS SIMULATOR
SEGA

Read this page very carefully before you play Star Trek Strategic Operations Simulator, the home video game that's so fast, so challenging, it comes with its own Combat Control Panel.

This is Star Trek as you've never played it before. Born in the arcade. Tested under fire. Then made even better. More challenging.

You fight Klingons and alien saucers throughout the galaxy. Maneuver through fields of space mines. And confront the ultimate enemy, Nomad. An enemy so powerful you'll need full phasers, warp speed and your Combat Control Panel to defeat him.

Star Trek. With the exclusive Star Trek Combat Control Panel. Don't leave Earth without it.

Made for:
Atari® 2600,™ Atari® 5200,™* Atari® Home Computers, Commodore 64™ and VIC-20,™ Texas Instruments 99/4A.™*

SEGA®
The Arcade Winners.

©1983 SEGA Enterprises, Inc. Star Trek is a trademark of Paramount Pictures Corporation. SEGA is a registered trademark of Sega Enterprises, Inc. Atari 2600 and 5200 are trademarks of Atari, Inc. Commodore 64 and VIC-20 are trademarks of Commodore Electronics, Ltd. Texas Instruments 99/4A is a trademark of Texas Instruments, Inc. *Combat Control Panel not available for Atari 5200 and Texas Instruments 99/4A.

make up the varied hues you see. "Prints" occur whenever the same set of phosphors is constantly excited by the same electron beam projecting the same image over a long period of time. Although the Atari switching circuit doesn't really change the overall image (parts of it may), the color switching means the same set of color phosphors is never excited long enough to take a print.

Lately I haven't seen very much printed about the SWORDQUEST series nor the supposed contest run by Atari involving all four puzzles. Was this just a phony come-on by Atari to sell the games? Has anybody ever solved any of them? I haven't even been able to solve the first one and hesitate to buy any more until I can at least do the initial game. In other words—Help!!

Fred Hannan
East Lyme, CT

No, it wasn't a phony come-on and yes, the contest is still going on. The *EarthWorld* winner was determined last March. Both *FireWorld* and *WaterWorld* finals were held in November and the *AirWorld* playoffs are scheduled for sometime in the first few months of 1984. If you write to Atari, I'm sure they can give you any details you need to know. The address is: PO Box 427, Sunnyvale, CA 94086

How do the experts write text adventures so that you can't list them? I'm thinking of writing one for my own computer.

R.C. Loveland
Oviedo, FL

That's a big topic, and one we can't really get into here. We *can* tell you that text adventures as a class of game don't really have any kind of copy-protection features that other kinds of games and programs can't use, and that there are almost as many schemes for defeating LIST functions as there are computers, programmers and individual pieces of software. The tricks range from including a function line as part of a REM statement (which has peculiar effects on Commodore computers), to LOAD tricks involving nonexistent memory locations, to flat-out encryption of the whole program. Nearly all we've heard of exploit some special hardware feature. So if you want to get into this, you ought to be a pretty advanced programmer who knows machine language and enough about the internal architecture of your target computer to understand how its LIST function works and where its "weaknesses" are. You don't say what kind of computer you use, but if it's an Atari, a good place to start would be by reading *De Re Atari*, a handbook from the Atari Program Exchange (P.O. Box 3705, Santa Clara, CA 95055) that reveals just about every detail known about the 400 and 800.

I saw TEXAS CHAINSAW MASSACRE in the October Hits & Missiles but I went to all the local stores and couldn't find it. Can you give me the address of Wizard Video Games to see if I can order it?

Damon Hajduck
Griffith, IN

Sure can, Damon: Wizard Video Games, c/o Spectrum Video Distributors, 5303 Sunset Blvd., Los Angeles, CA 90027. Both *Chainsaw* and the other recent Wizard release, *Halloween*, are available from them via mail order. All you need do is enclose a cashier's check or money order (payable to Spectrum Video Distributors) for $24.95 (includes postage and handling), tell them which game you want, and mark the envelope to the attention of Dwight Krizman. They'll get it back to you right away.

Do you have a question about video games or computers that needs answering? Send your questions to: Electronic Fun, *350 E. 81st St. New York, NY 10028.*

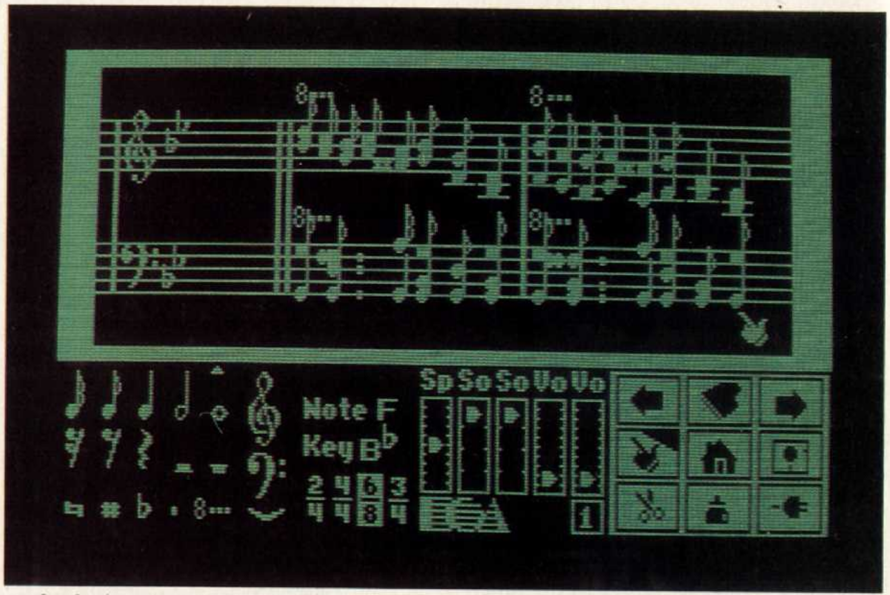
The END *of* DINKETY-DINK-DINK.

Announcing the first computer music program that actually sounds like music.

LET'S FACE IT. Up till now, music programs for your home computer have all sounded, well, pretty lame. There were the ones that resembled little electronic music boxes, remember? And then there were those that sounded like so many burps.

Enter Music Construction Set.™ It's the first music program that really makes use of the power of that machine you've got. If you're a serious student, this means you'll be able to work with an intricacy and range of sound quality you've never heard before on a computer. And if you know nothing about music, you'll find something even more important. Namely, that this thing is simple enough to be a lot of fun.

Take a good look at this screen because it, you, and a joystick are the whole story here.



That's you at the right end of the staff of notes – the little hand. Move the joystick, and you move the hand. Use it to carry notes up to the staff. Lay in rests, signatures, clefs, then point to the little piano in the lower right and listen, because you'll hear the whole thing played back.

Move those little scales in the middle up and down to vary the music's speed, sound quality, and volume. Use the scissors to cut out whole measures, then use the glue pot to paste them in somewhere else. Got a printer? Great. Print the score out and show it off to your friends.

MUSIC
CONSTRUCTION SET
YOU MAY BE AN UNHERALDED MUSICAL GENIUS

But what if you're not up to writing your own stuff yet? No problem. There are twelve pieces of music already in here, from rock 'n roll to baroque. They're fun to listen to, and even more fun to change. (Apologies to Mozart.)

The point is, the possibilities are endless. But if you're still skeptical, visit your nearest Electronic Arts dealer and do the one thing guaranteed to send you home with a Music Construction Set in tow.

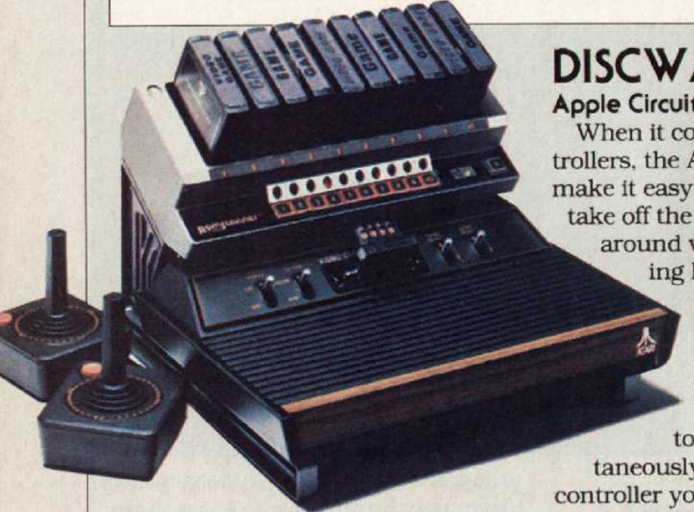
Boot one up. Point to the piano. And listen.

ELECTRONIC ARTS™

MUSIC CONSTRUCTION SET is now available for Apple II, II+, IIe, and Commodore 64 computers. The Apple version, with a Mockingboard,™ plays chords of up to six notes each. The Commodore version plays chords of up to three notes each. Apple is a registered trademark of Apple Computer. Commodore is a registered trademark of Commodore Business Machines, Inc. For more information about Electronic Arts, write us at 2755 Campus Drive, San Mateo, CA 94403 or call (415) 571-7171.

new
products

Time for a changer



MARJAC TECHNOLOGY

Game Changer about $59.00

Perhaps the most tedious thing about playing video games (aside from constantly losing) is taking out one cartridge, putting in another, taking out, putting in etc. That's where the RomScanner comes in so handy. The RomScanner gives you the capability of switching from one to another game at the touch of a button. It holds 10 cartridges and you go from one to another simply by pushing the button with the correct number on it. The RomScanner also helps keep at least nine games out from under-foot, too which prevents them from being stepped on. Right now it is only available for the Atari 2600 but should be made to fit other systems in the near future.

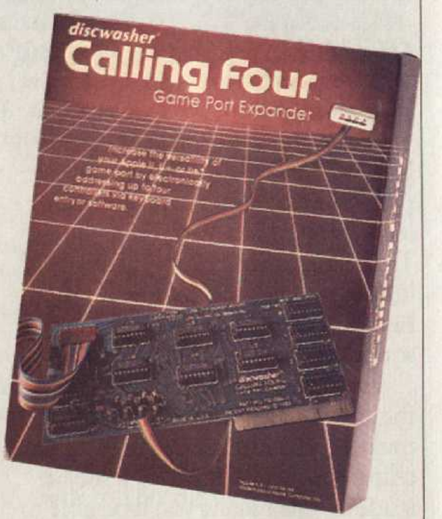
MarJac Technology
2061 West Mill Rd.
Milwaukee, WI 53209

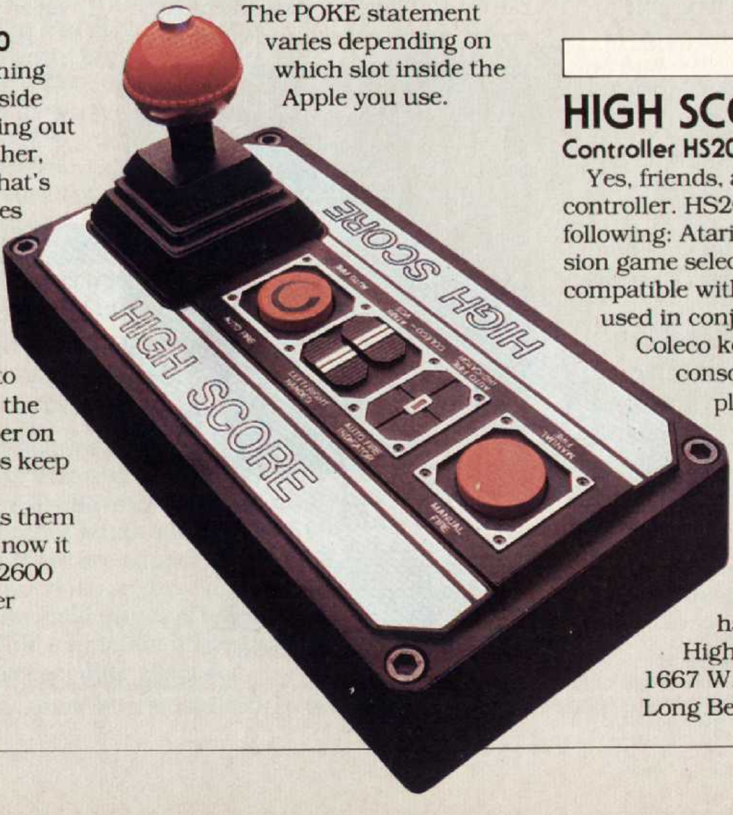
DISCWASHER

Apple Circuit Card $69.95

When it comes to attaching controllers, the Apple computer doesn't make it easy for you. You've got to take off the cover and monkey around with the insides. So Calling Four, from Discwasher, should make life a lot easier. Calling Four fits into a slot inside the machine and then allows four controllers to be plugged in simultaneously. You determine which controller you want to use by punching in a POKE statement before playing which automatically activates the port you want. The POKE statement varies depending on which slot inside the Apple you use.

Discwasher
1407 N. Providence Rd.
PO Box 6021
Columbia, MO 65205





HIGH SCORE

Controller HS20 $39.95

Yes, friends, another replacement controller. HS20 features include the following: Atari VCS and ColecoVision game selector switch making it compatible with both and able to be used in conjunction with the Coleco keypad; a weighted console base; six silver-plated leaf switches; built-in auto fire circuitry; an LED auto fire rate indicator and separate dual fire buttons for right-and left-handed players.

High Score
1667 W. Ninth Street
Long Beach, CA 90813

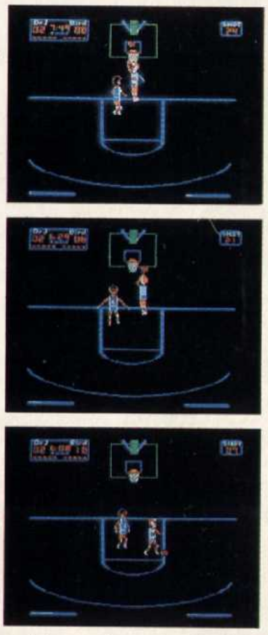
SOFTWARE ARTISTS?

How we got this year's hottest sports game out of two rather inexperienced designers.

TO MAKE THE FIRST BASKETBALL PROGRAM that feels like the real thing, it helps to start with two guys who know what the real thing feels like.

Enter Larry Bird and Julius Erving. Bird – the hustler, the strong man, deadly from outside. Erving – The Doctor, maybe the most explosive player in the history of the game.

We talked to them, photographed them in action, studied their moves and their stats and their styles. Then we set out to create on computer disc an event which may never happen in real life. We put the two of them together on a dream court of light, for an electronic afternoon of one-on-one.

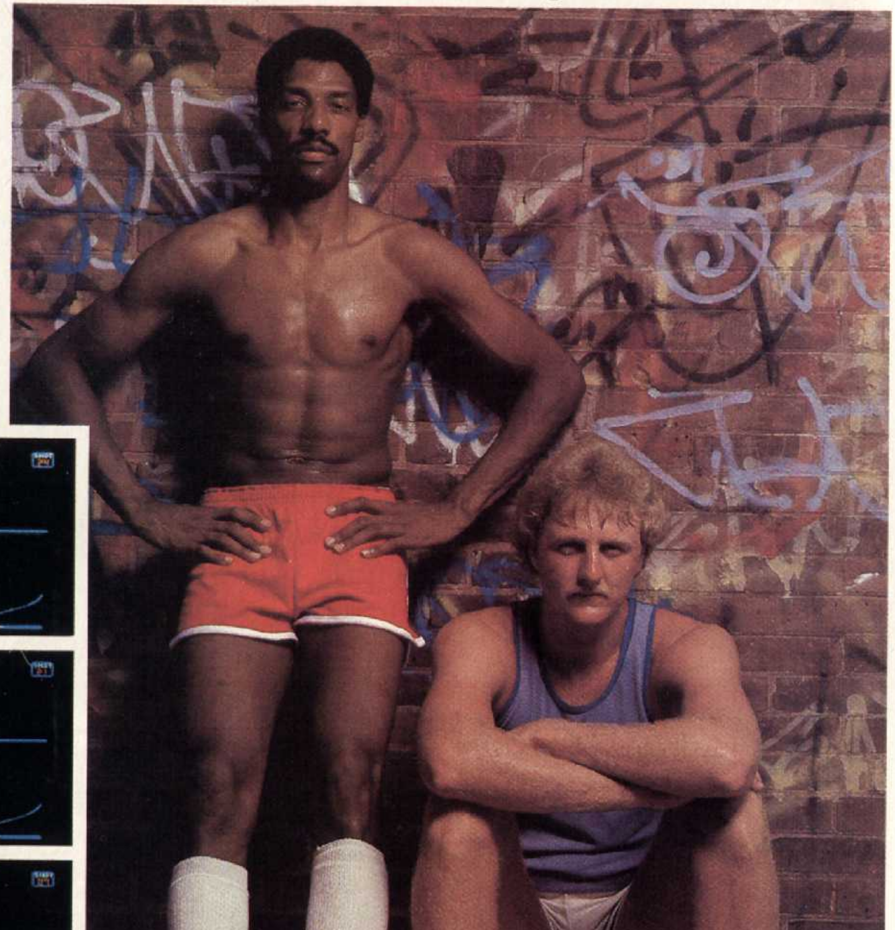


It wasn't easy. When they talked, we listened. When they criticized, we made big changes. When they gave suggestions, we took them.

And it shows. This thing is absolutely uncanny. You actually take on all the skills and characteristics of Bird or The Doctor – their own particular moves, shooting abilities, even strength and speed.

You'll meet with fatigue factors, hot and cold streaks, turnaround jump shots, and 360-degree slam dunks. But there's some whimsy in here, too – a funny referee, a shattering backboard, even instant replay.

It's called *Julius Erving and Larry Bird Go One-on-One.*™ You're Bird. Or you're The Doctor. And that's the last decision you'll have plenty of time to make.



Julius Erving and Larry Bird Go One-on-One is now available on diskette for Apple II, II+, and IIe computers. Apple is a registered trademark of Apple Computer. To find out more about Electronic Arts and its products, write us at 2755 Campus Drive, San Mateo, CA 94403 or call (415) 571-7171.

ELECTRONIC ARTS™

ELECTRONIC FUN WITH COMPUTERS & GAMES

E.F.G. Times

VOLUME TWO, NUMBER TWO

JANUARY 1984

I'D RATHER WIN IN PHILADELPHIA

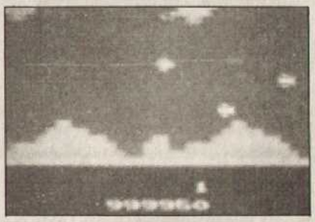
Saving Atlantis

On August 18, 2,500 rabid video gamers got to show off their skills. It was the Second Annual Videothon Championship of Delaware Valley. Co-sponsored by R&S, a computer and video game distributor, and Imagic, the Videothon was held in Philadelphia's Kennedy Plaza. Contestants were asked to play each of the 10 games once, with scores recorded after two minutes. Games included *Fathom*, *Moonsweeper*, *Solar Storm*, *Dragonfire*, *Demon Attack*, *No Escape*, *Ice Trek*, *Nova Blast* and *Atlantis*. Seventy prizes were awarded in all. The 10 first prize winners received a Coleco Gemini Video System with two cartridges. The 10 second prize winners received a collection of Imagic software and runners-up each received one game from Imagic. The first 2,500 entrants also got a free T-shirt. The Videothon was plugged on WIFI, a local radio station which held its own sweepstakes, as well.

Angela Notte wins a trip to Acapulco

The Grand Prize, which went to Angela Notte, was an all-expenses paid five-day/four-night vacation for two in Acapulco, Mexico. The Videothon was held for the benefit of Fight for Sight in Philadelphia.

Monthly Contest



The winning score

This month, every time we opened an envelope, we were bowled over by the score and were sure that it was the highest. Then we'd open the next, and by golly, it would be higher. You're all so good at *Vanguard*, we're really impressed. The winner, with 999,950 points, was Kevin Amedy of Worcester, MA. Congratulations Kevin! Look for your cartridge in the mail.

This month's contest is *Q*Bert* in whatever format you have at hand. As usual, send us a clear picture of your highest score. Print your name, address, the score and the names of three cartridges you'd like to win in order of preference. Please attach this information to the back of the picture and send it to: JANUARY CONTEST, Electronic Fun, 350 E. 81st St., New York, NY 10028. Entries must be postmarked by January 15 and, in the event of a tie, a drawing will be held to determine the winner.

Programs Easy as I, II, III

64K
TIMEWORKS
Programming Kit 1.
Beginning Game Design
Lunar Lander

Learn-to-program

Want to learn how to program but don't want to sit in a classroom? Get the Timeworks series. Timeworks Programming Kits I, II and III offer Commodore 64 owners a practical, how-to learning approach to basic programming skills. Kit I allows you to design your own game—*Lunar Lander*—and teaches display design and animation. It also gives you pointers on what should go into a good game. Kit II is an intermediate game design program and sprite builder. Subjects covered include use of arrays, *FOR/NEXT* loops and moving graphics. The use of sprites is also covered in detail. Kit III is an intermediate data base system which covers entry and retrieval, tape storage, string arrays and sorting techniques. Each kit costs about $24.95 and is available from Timeworks, PO Box 321, Deerfield, IL 60015.

FIRST, THE GOOD NEWS.

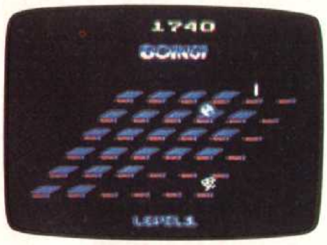
ASTRO CHASE
WINNER
ARCADE AWARDS
19
84
ELECTRONIC GAMES MAGAZINE

First Star Has 4 New Games.

Fernando Herrera, the designer of ***ASTRO CHASE*** (1984 Science Fiction / Fantasy Computer Game of the Year*) and our design team again define "State of the Art."

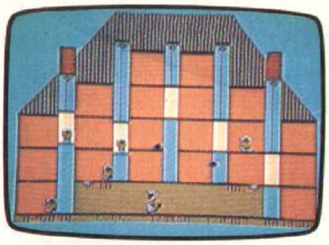
Superior graphics, real-time animations™, multiple screens, intermissions, arcade-quality sound, innovative gaming, challenge and excitement—we deliver it all!

THE BAD NEWS? You can't play them all at once.


1740
BOING!
LEVEL 1

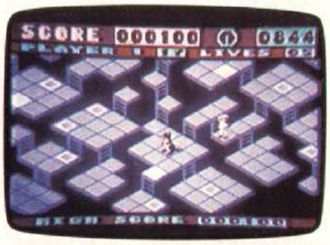
BOING!™

Designed by Alex Leavens
& Shirley A. Russell
ATARI Atari VCS 2600



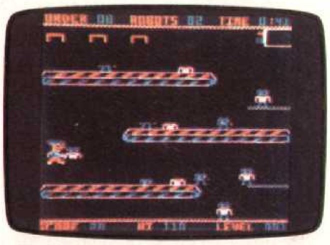
BRISTLES™

Starring Peter the Painter
ATARI Designed by Fernando Herrera
Atari Home Computers
Commodore by Paul Kanevsky


SCORE 000100 0844
PLAYER LIVES
HIGH SCORE

FLIP and FLOP™

ATARI Designed by Jim Nangano
Atari Home Computers
Commodore by Adam Bellin


ROBOTS
TIME
LEVEL

PANIC BUTTON™

TRS-80 Color Computer
by Paul Kanevsky
Commodore Computers

*Electronic Games Magazine 1984 Game Of The Year Award

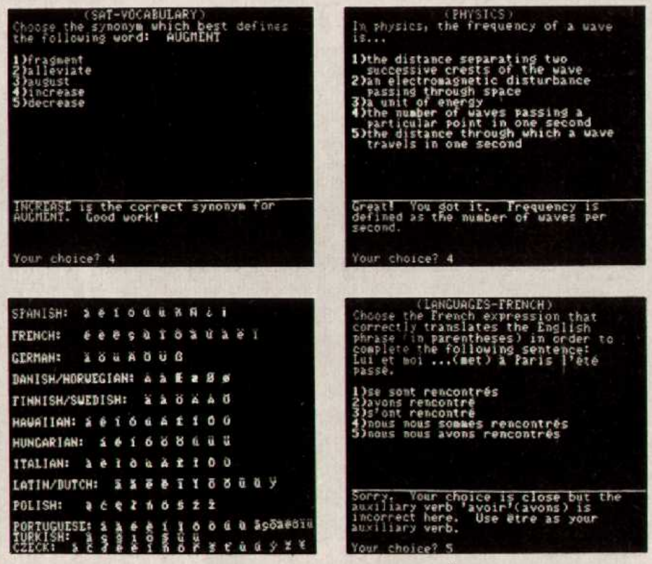
FIRST STAR SOFTWARE INC

"When being first counts...we're number one!"
22 East 41st Street, New York, NY 10017
Distributor and Dealer Inquiries Invited/212 532-4666

Atari, Vic-20 and TRS-80 Color are the registered trademarks of Atari, Inc., Commodore Business Machines, Inc., and Tandy Corporation respectively. Astro Chase, Bristles starring Peter the Painter, Flip and Flop, Panic Button, Boing!, are trademarks of First Star Software, Inc. Printed in USA, all rights reserved. © 1983 First Star Software, Inc.

MULTILINGUAL WORD PROCESSING

Once you've mastered word processing in your native language, the next logical step is to try it out in a foreign tongue. With Type-Writer, you can write anything you want in as many as ten foreign languages using your Apple computer. Included with the disk is a detailed instruction booklet which teaches you how to enter text, delete or change characters, words, lines or paragraphs, search, print and store the text. Specially accented letters allow you to perform word processing functions in languages that include Hawaiian, Danish, Finnish, Hungarian and Swedish. No hardware modification is necessary for accented, or upper- and lower case letters. The Type-Writer program can be bought for $69.95.



```
          (SAT-VOCABULARY)
Choose the synonym which best defines
the following word:  AUGMENT

1)fragment
2)alleviate
3)august
4)increase
5)decrease

INCREASE is the correct synonym for
AUGMENT.  Good work!

Your choice? 4
```

```
            (PHYSICS)
In physics, the frequency of a wave
is...

1)the distance separating two
  successive crests of the wave
2)an electromagnetic disturbance
  passing through space
3)a unit of energy
4)the number of waves passing a
  particular point in one second
5)the distance through which a wave
  travels in one second

Great!  You got it.  Frequency is
defined as the number of waves per
second.

Your choice? 4
```

```
SPANISH: á é í ó ú ü ñ Ñ ¿ ¡
FRENCH:  é è ê ç ù î ô â û à ë ï
GERMAN:  ä ö ü Ä Ö Ü ß
DANISH/NORWEGIAN: Å å Æ æ Ø ø
FINNISH/SWEDISH:  ä å ö Ä Å Ö
HAWAIIAN: ā ē ī ō ū Ā Ē Ī Ō Ū
HUNGARIAN:  á é í ó ö ő ú ü ű
ITALIAN: à è ì ò ù À È Ì Ò Ù
LATIN/DUTCH:  ā ă ē ĕ ī ĭ ō ŏ ū ŭ ÿ
POLISH:  ą ć ę ł ń ó ś ź ż
PORTUGUESE: á à é ê í ì ó ô ú ù ãçõâêôíü
TURKISH:  â ç ğ ı ö ş ü û
CZECK:  á č ď é ě í ň ó ř š ť ú ů ý ž
```

```
        (LANGUAGES-FRENCH)
Choose the French expression that
correctly translates the English
phrase (in parentheses) in order to
complete the following sentence:
Lui et moi ...(met) à Paris l'été
passé.

1)se sont rencontrés
2)avons rencontré
3)s'ont rencontré
4)nous nous sommes rencontrés
5)nous nous avons rencontrés

Sorry.  Your choice is close but the
auxiliary verb 'avoir'(avons) is
incorrect here.  Use être as your
auxiliary verb.

Your choice? 5
```

Sample screens from Type-Writer

DEPARTMENT OF CORRECTIONS

In the November First Screening, *Pearl Harbor*, we inadvertently left out several mathematical symbols. Here are the lines as they should read:

```
445 IF MINU > = JERRY
THEN 1050
450 IF ET > 59 THEN
MINU = MINU + 1
::GOSUB 800
500 IF DIST3<-100 THEN
GOSUB 1160
670 Q = Q + 5::IF Q>120
THEN 675 ELSE 680
```

Also in November: on page 93 in the Joystick Rating Chart we printed the price of the Discwasher Pointmaster as $69.95. This is wrong. It really costs $16.95. Quite a difference, eh?

Poet's Corner

In October, we printed a poem written by one of our readers. We also requested more poetry. We love poetry. Apparently, so do you. We received many fine verses that would make even Longfellow jealous! Here, then, is this month's poem written by Quinn Taylor, aka Video Ace, aka Mr. Expert.

I got FROGGER across the street and the river,
The ice cubes in PENGO made me shiver.
The bugs in MILLIPEDE made me sick.
Saving Q*BERT from Coily was an easy trick.

In JOURNEY I saved the rock band's guitars,
While on BUMP 'N' JUMP I wrecked all of the cars.
I played WACKO and killed the strange alien beings.
And on BUBBLES I cleaned every one of the sinks.

I've got my initials on every game,
Which has caused me to have instantaneous fame.
So I'll get some money and swiftly run,
Down to the store to buy Electronic Fun!

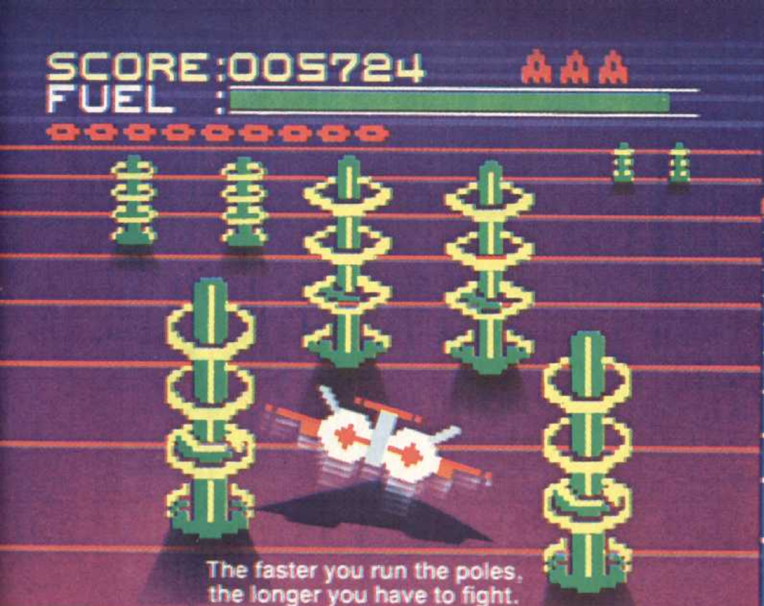
QUOTE OF THE MONTH

Seen in Chinatown, NYC: "A father and his small son holding hands and wearing T-shirts that bespoke cultural assimilation. The father's shirt said 'Hong Kong,' the son's shirt, 'Donkey Kong'."
From the New York Times

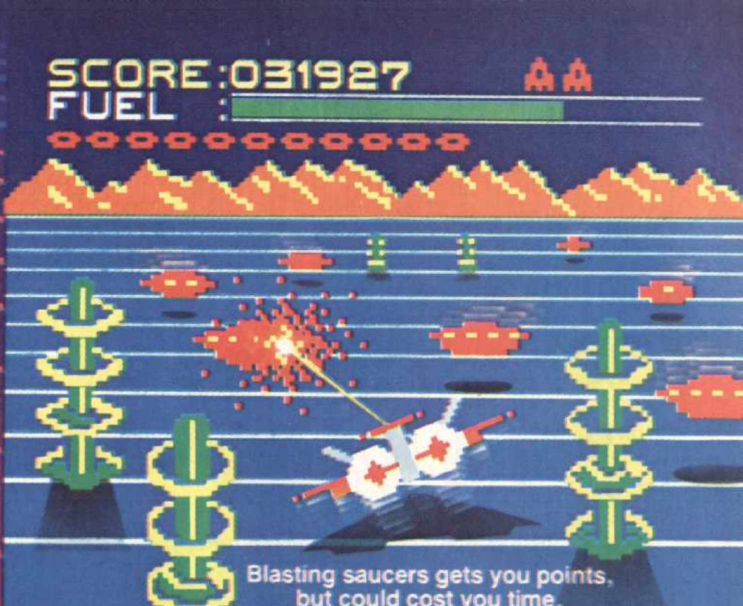
Kraft Kontest

Here's an update on the Kraft Kideo Game Contest announced in last month's *Times*. The judging will take place during the month of April 1984 and winners will be announced on May 1, 1984. The judging panel will consist of computer specialists, educators and nutritionists and the entries will be judged on originality, fun, educational value, nutritional content (huh?), nonviolent activity and interactive gameplay. Go for it.

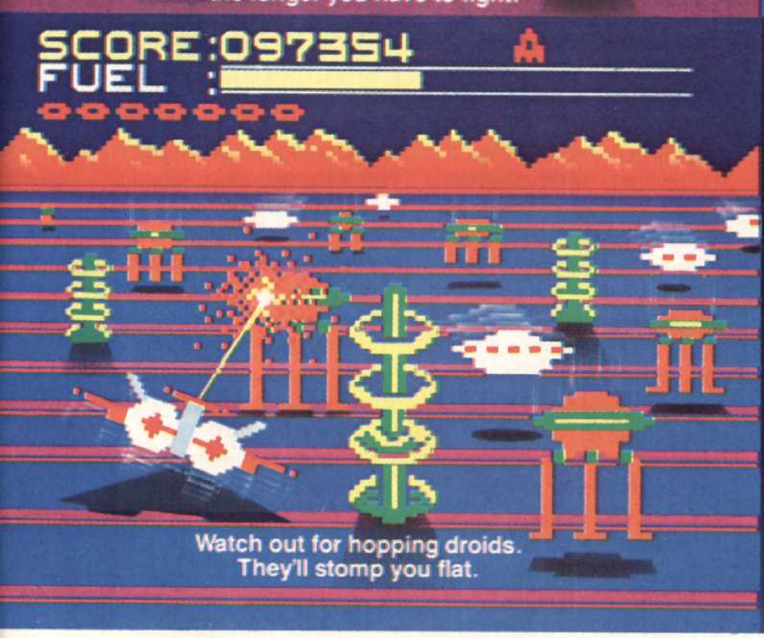
Have you got an item for the EFG Times*? News events, game tips, photos and other information are gladly accepted. Send material to:* EF, *350 E. 81st St., New York, New York 10028.*



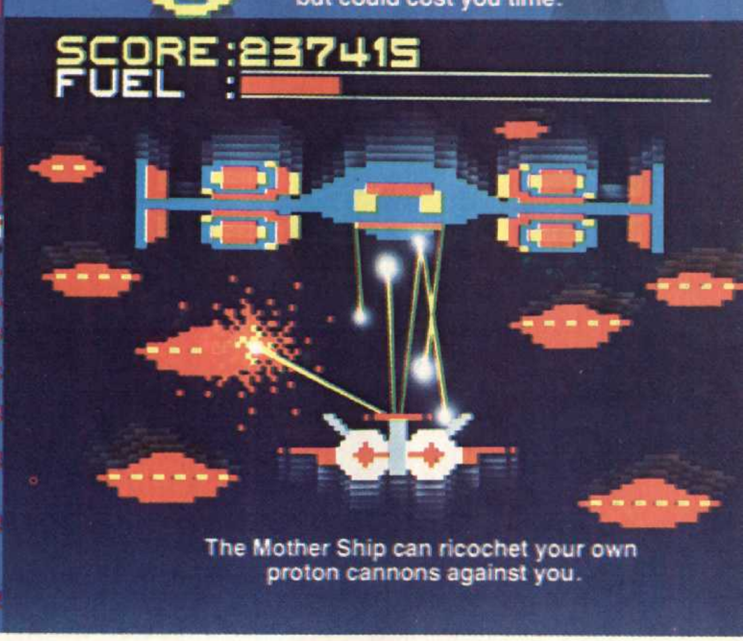
The faster you run the poles, the longer you have to fight.



Blasting saucers gets you points, but could cost you time.



Watch out for hopping droids. They'll stomp you flat.



The Mother Ship can ricochet your own proton cannons against you.

Buck Rogers, Planet of Zoom. Your one chance to defeat the toughest enemy of all. Time.

BUCK ROGERS
PLANET OF ZOOM
SEGA

If you've played Buck Rogers, Planet of Zoom in the arcades, you've had a taste of what space chase action is all about. Now maybe you're ready for something even better.

A home game that takes the arcade version and makes it even faster, more challenging, more fun.

You'll battle your way through 3-D space. Maneuver through bullet-firing magnetic poles and alien saucers. Shoot it out with hopping droids and enemy fighters until you face the ultimate challenge, the mother ship.

But time is not on your side. You have to be fast to destroy the mother ship. If you're too slow, kiss mother goodbye.

Look for Buck Rogers at your local store. But hurry. This is one game that's really moving fast.

Made for:
Atari® 2600™
Atari® 5200™
Atari® Home Computers,
Commodore 64™ and VIC-20,™ Texas Instruments 99/4A™

SEGA®
The Arcade Winners.

©1983 SEGA Enterprises, Inc. SEGA is a registered trademark of Sega Enterprises, Inc. Buck Rogers is a trademark of the Dille Family trust.
Atari 2600 and 5200 are trademarks of Atari, Inc. Commodore 64 and VIC-20 are trademarks of Commodore Electronics, Ltd. Texas Instruments 99/4A is a trademark of Texas Instruments, Inc.

Where there's a Wang there's a will

Ashes to ashes, disk to disk

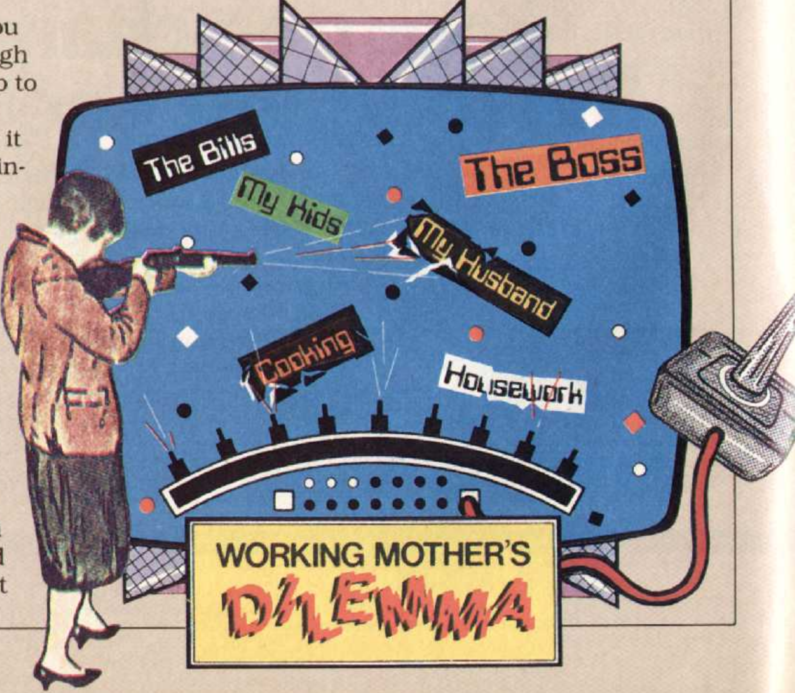
For a long time, the law was inaccessible to the common person. This was largely due to the fact that lawyers know all these really impossible foreign phrases such as "in medias res" and "habeas corpus" and (my personal favorite) "in flagrante delicto". In order to sound legal, you practically had to take a course in conversational Latin and most of us have enough trouble mastering English. Leave it to computers to put the law into a format that is understandable by all. The latest software program available for the IBM PC is Personal Lawyer/Wills and it does just what it says: it gives you the chance to write your own will without the interference of attorneys. The program costs $50 and asks users a series of questions about their lives, their relatives, their last wishes etc. For example, it asks you your name, the date, where you live, if you're married, how many kids you have and so on. Although the program can ask up to 80 questions, it hardly ever uses that many as it is programmed to eliminate unnecessary questions. That is, if you answer that you're not, in fact, married, it won't go on to inquire about what your wife's (or husband's) name is. Almost as smart as a real lawyer, n'est-ce pas? After the whole procedure is gone through, the computer then prints out a last will and testament tailored to fit your life (or death, as it were). If only Howard Hughes had one. There wouldn't be so many unhappy not-billionaires floating around.

Cleanliness is next to ESC

As far as we're concerned a home computer is just another dust-collecting doodad. And we don't need one of those. We're such bad housekeepers. In fact, there are so many dust bunnies under our beds that we're thinking of bringing in some dust-wolfies to restore the proper ecological balance. Anyway, for those of you who *do* clean and have been faced with the profound problem of how to dust those hard to reach spots on or in your home computer, seek no more. The answer is here. The Data Vac is a special mini-vacuum cleaner designed specifically for cleaning computers and their peripherals. It's portable, has a three-foot hose and a round brush with fine bristles. It's even got an Air Pinpointer for ultra-precise cleaning (whatever that means). All of this is, of course, guaranteed to fix it so that your computer can pass the white glove test. Our only question is: where to get a cleaning crew small enough to handle it?

'Til disk do us part

If you listen to feminists, you'll be given to understand that



women have historically been left with the short end of the stick. The first video games were designed with men in mind. No games were written specifically with women in mind. *Working Mother's Dilemma* is perhaps the first one of this kind. Apparently it's based on real-life "hassles" and not on asteroid battles. One can only speculate what the player has to deal with when she boots up this particular game. Let's see...You are a woman. You've got to battle the dreaded Sex Discriminatoids who try to prevent you from (a) getting a job and (b) taking home as much money as a man would in the same position. Highest points are given to women who divorce their husbands, give them custody of the children and are able to pay both child support and alimony.

My name is Freud 2000

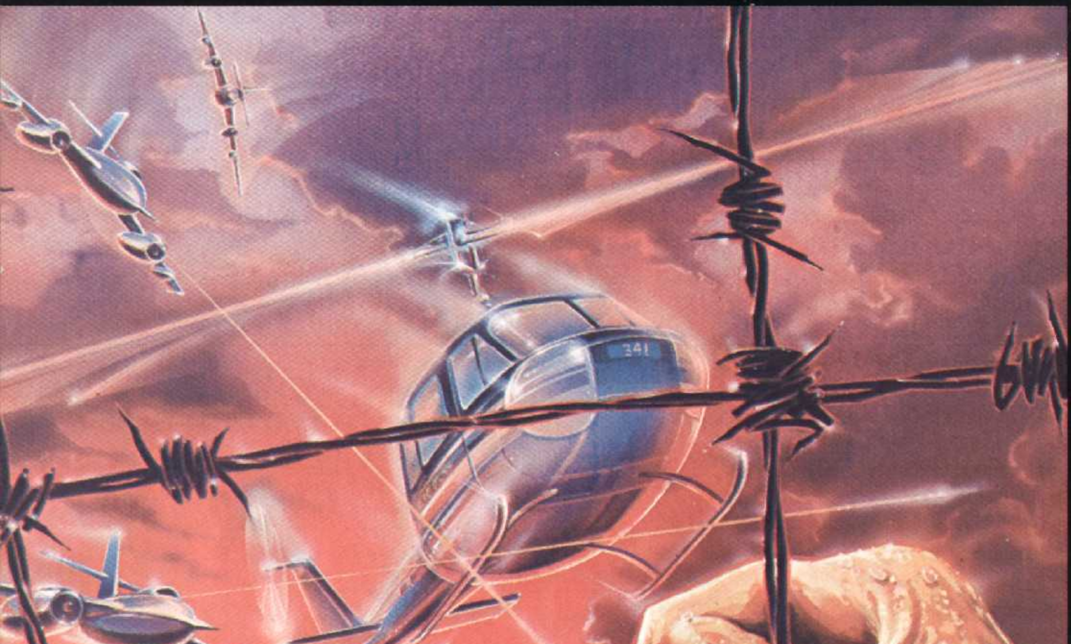
Many people have a hard time telling the difference between psychoanalysis and computers. When you think about it, this is not hard to understand. Both can cost most of your disposable income, both take a long time to get through and neither is guaranteed to work. A good way to tell whether something is psychoanalysis or a computer is to lie down. If it's comfortable, it's psychoanalysis. If the RETURN key sticks you in your 17th vertebrae, it's a computer. It's no longer this simple. The fine line between the two has recently become even finer. Why? Because of several new computer programs that practically take the place of analysis and one piece of computer hardware that does almost the same thing. For example, there's a personal-intimacy program called *Intimacy, The Art of Communication* which promises that those who use it will be able to "interface" (you should pardon the expression) with other people. There's also an *Assertiveness Training* program with a special section entitled "Special Problems" that teaches people how to deal with guilt-makers. The hardware mentioned before is a terminal which gives psychological tests to clients such as personality tests, psychotic profiles and temperament surveys. To diagnose possible schizoprenics, a double disk drive is required.

One track(ball) mind

Here it is, at last. The ultimate way to prevent all those controller errors; the last word in getting rid of that inadequate joystick you're always complaining about. And, best of all, everyone, with the possible exception of a couple of my friends, has one built in. What is it? The mind. That's right. In the offices of Behavorial Engineering in Scotts Valley, California, they're even now perfecting the use of a controller that allows you to simply think what you want to happen on screen and voila! Based on galvanic skin response (like a polygraph), the device measures changes in the skin. Players simply hold a mouse-like device in their hands while thinking a spaceship up or down or left or right. There's only one game available so far (it is compatible with the Apple II computer) but more games are planned. The device with the software should cost in the neighborhood of about $40. We can think of a couple of problems with something like this. For example, where's the firing button? Do you use your nose, or what? What if you're dyslexic? Will your spaceship go the wrong way? Will they be able to make one that's Coleco-compatible given the absence of a keypad or will the features on your face correspond to the numbers? And, finally, what will you do if you need a replacement? Where will you get it? The local cemetery? Shades of Dr. Frankenstein!

Illustrations: Dave Shannon, Tim Parker, Pat Kinsley, Tom Nuberry

Award-Winning Hits for your Commodore



CHOPLIFTER*
For the Commodore VIC-20.

Those are our men they're holding hostage! We don't care how you do it, but you've got to shoot your way in there and bring 'em back alive. You've got three choppers, probably not enough but it's all we can spare. And the enemy camp is pretty heavily fortified. With tanks, jetfighters and truly nasty laser bombs. Okay, maybe it's a suicide mission, but somebody's got to do it. Dozens of innocent lives are at stake. We're counting on you... don't let them down!

1983
AWARD
WINNER
★★★★

CREATIVE SOFTWARE
PRESENTS
CHOPLIFTER
CARTRIDGE FOR USE WITH THE COMMODORE VIC-20
NO ADDITIONAL MEMORY REQUIRED

Now you can play some of America's hottest computer games on your Commodore, and get a FREE introduction to Home Management Software. It's our way of showing you that action-packed gaming is only the beginning of your Commodore's capabilities.

C R E A T I V E

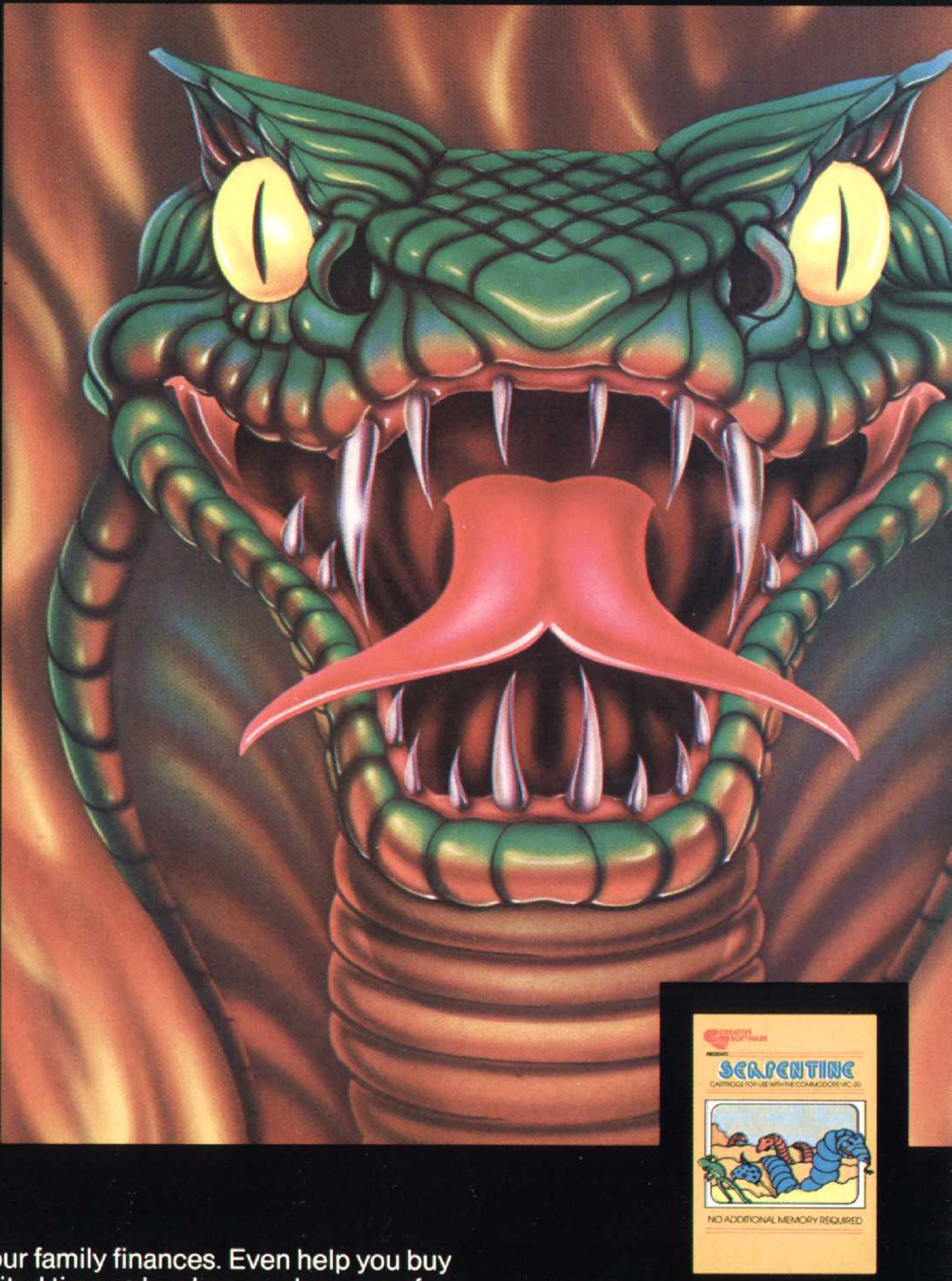
*SELECTED AS SOME OF THE "MOST INNOVATIVE COMPUTER PROGRAMS" 1983 CES SOFTWARE SHOWCASE AWARDS.

with a Free Software Bonus.

SERPENTINE*
For the Commodore VIC-20.

In the Kingdom of Serpents, the only rule is eat or be eaten. Three huge and evil red snakes are slithering through a complex series of mazes, closing in on your good blue serpent from all sides. Move fast and watch your tail! Try to survive long enough to let your eggs hatch into reinforcements. Swallow the magical frogs or your enemy's eggs and you can get the strength to go on. . . but look out to your left. . . and ahead of you! They've got you surrounded, and it looks like meal time.

1983
AWARD
WINNER
★★★★


CREATIVE SOFTWARE
PRESENTS
SERPENTINE
CARTRIDGE FOR USE WITH THE COMMODORE VIC-20
NO ADDITIONAL MEMORY REQUIRED

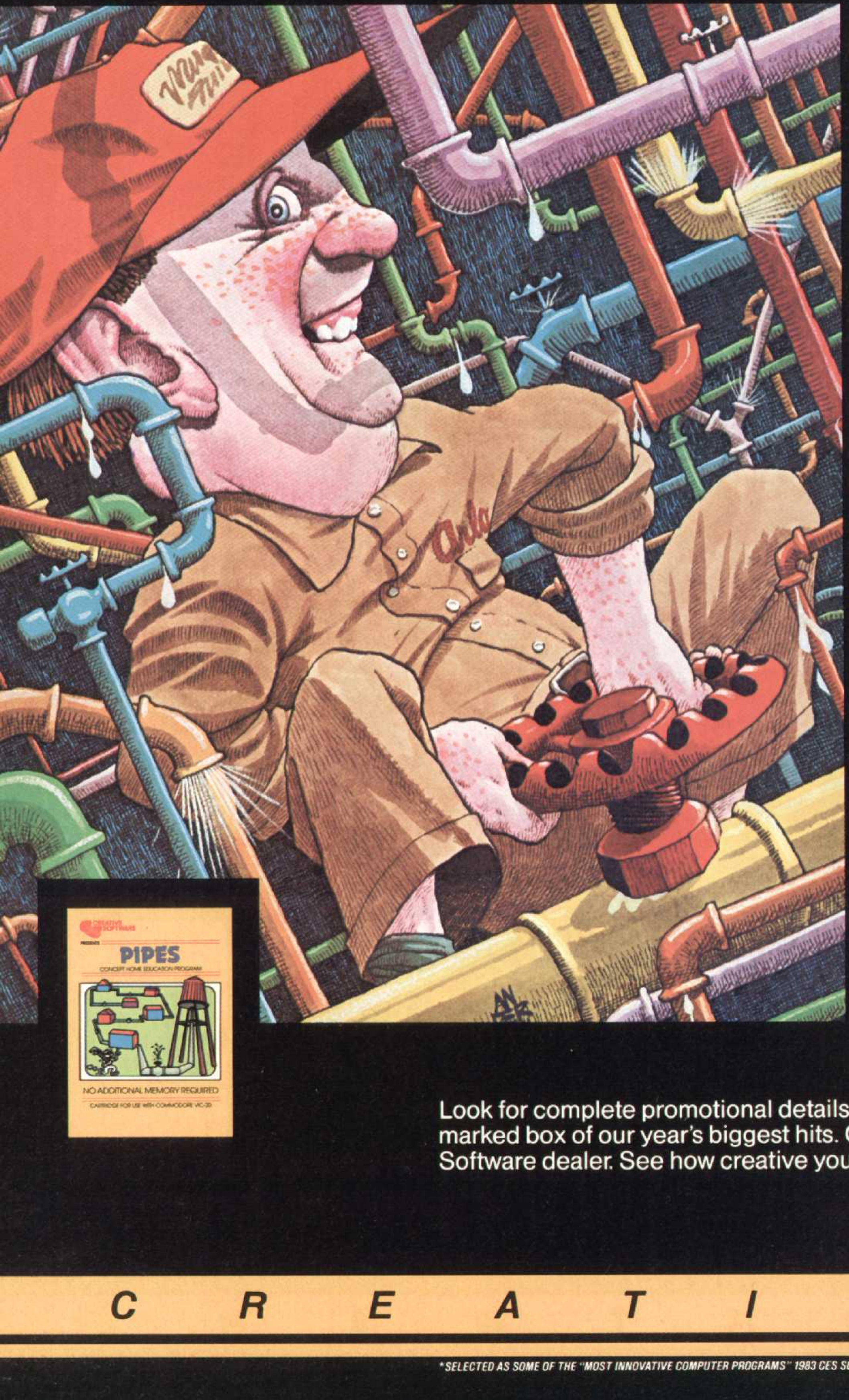
It can teach you. Manage your family finances. Even help you buy a new car. And now, for a limited time only, when you buy one of our specially-marked games you'll receive a certificate good for one of our Home Management Programs absolutely free.

SOFTWARE

"CHOPLIFTER" AND "SERPENTINE" ARE VIC-20 TRANSLATIONS OF ORIGINALS BY DAN GORLIN AND DAVID SNIDER, RESPECTIVELY.

"CHOPLIFTER" AND "SERPENTINE" ARE LICENSED FROM BRODERBUND SOFTWARE, INC.

Get more out of your Commodore.


Arlo
CREATIVE SOFTWARE
PRESENTS
PIPES
CONCEPT HOME EDUCATION PROGRAMS
NO ADDITIONAL MEMORY REQUIRED
CARTRIDGE FOR USE WITH COMMODORE VIC-20

*PIPES**
For the VIC-20 and Commodore 64.

Arlo is a hard-working plumber, but a touch absent-minded. He's building a water supply system for the whole neighborhood, and he really has his hands full. Help Arlo decide what kind of pipe to buy and where to put it... his limited budget doesn't leave him much margin for error. Figure out the shortest, most economical way to get everyone hooked up... and just hope poor Arlo has remembered to open and close the right valves. A marvelously entertaining and challenging exercise in planning, economics and spatial relationships for all ages.

1983
AWARD
WINNER
★★★★

Look for complete promotional details inside each specially-marked box of our year's biggest hits. Or talk to your Creative Software dealer. See how creative your Commodore really can be!

CREATIVE

**SELECTED AS SOME OF THE "MOST INNOVATIVE COMPUTER PROGRAMS" 1983 CES SOFTWARE SHOWCASE AWARDS.*

Get Creative!

SAVE NEW YORK™
For the Commodore 64.

It was as peaceful a day as New York ever gets, when suddenly the sky went dark and a monstrous droning noise filled the air. Hordes of grotesque aliens were swooping down from all sides, biting into the Big Apple as if they hadn't eaten for days. They were laying eggs, too. Horrible slimy things that got down into the subway tunnels and began clawing their way up. If anyone was going to save the city, it would have to be me. I leapt into my rocket and began blasting away. I thought I stood a fighting chance, but fuel's running low... another wave of invaders on the horizon ... signing off...

CREATIVE SOFTWARE
PRESENTS
A GAME ON CARTRIDGE FOR THE COMMODORE 64™
SAVE NEW YORK

SOFTWARE

"VIC-20" AND "COMMODORE 64" ARE TRADEMARKS OF COMMODORE ELECTRONICS, LTD.

© 1983 CREATIVE SOFTWARE

1984

BIG BROTHERHOOD YEAR IS HERE

How does Orwell compare to reality?

George Orwell's novel 1984 *painted a frightening picture of life in a totalitarian society. Since the time it was written—and while computers were becoming more pervasive—many social historians decided that Big Brother would be replaced by Big Mainframe. Now that 1984 is here, just how close was Orwell to the truth?*

By Suzan Prince

1984. We've been waiting for this year, looking forward to it with a mixture of dread and curiosity. And all because of George Orwell. When Orwell chose to set his radical novel in 1984 it seemed almost as if it were a fictitious year, so far in the future as to be absurd and certainly not a year that really existed. But it does and it's here.

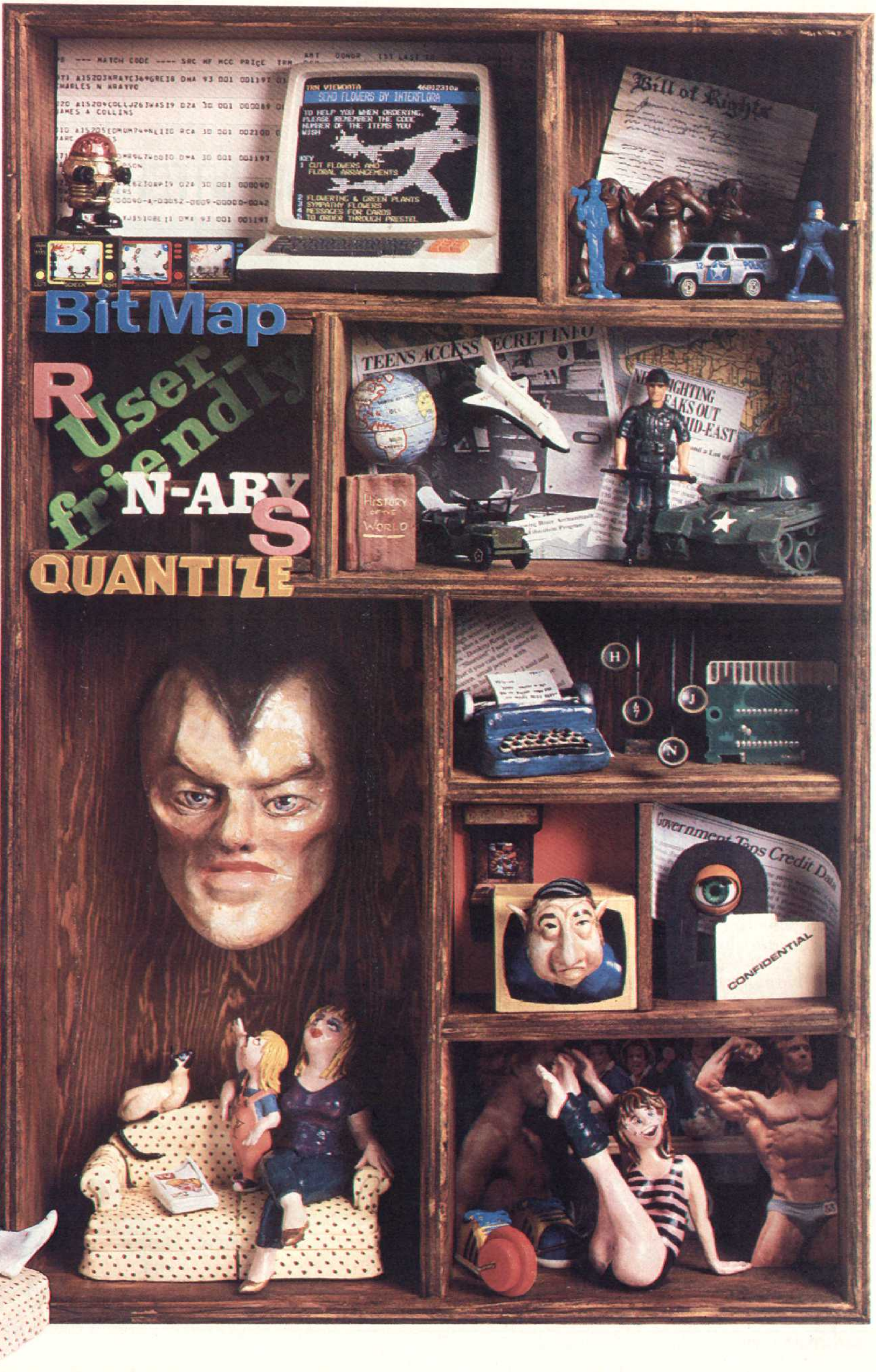
The novel *1984* paints a rather gloomy picture of futuristic society—a totalitarian state in which all books and songs are written by computers, in which electronic surveillance is the norm and in which it is required to believe that "War is Peace, Freedom is Slavery and Ignorance is Strength." In *1984*, the masses exist only to be kept subservient and to be fed truths and bromides manufactured by the government and its leader, Big Brother. Big Brother, whose ominous, intimidating face is plastered on walls and kiosks all over the city, knows everything you do, everything you say and everywhere you go. Even your thoughts are not your own. The Thought Police know what you're thinking at all times and will arrest you if you dare to have a single creative, individual idea. Big Brother is everywhere. Big Brother Is Watching You, read the posters. In 1984, Big Brother is always watching you.

How close is the real 1984 to Orwell's dark vision? Will Big Brother really start watching us? Many would have us believe that technology brings us closer to totalitarianism, but we feel the opposite is true. While Orwell turned out to be absolutely uncanny in certain of his predictions, his viewpoint was simply too extreme to be entirely true. We thought it might be interesting to take a look at just how accurate he was when he wrote his book way back in 1949. Using as our checklist 10 ideas Orwell proposed in the novel, we'll go through them one by one and rate them with crystal balls—four for a prediction that was dead right all the way down to one crystal ball for an idea that ended up being more fiction than fact.

1. The Telescreen: In the world of *1984*, the telescreen (two-way television installed by the government in all homes as well as in public places, at work and in recreational areas) represented the ultimate invasion of individual privacy. People were watched as they slept, ate, walked and talked to one another, thus enabling the Party to keep extensive video recordings as well as written files on their victims. Moreover, they weren't merely watched—they could also be spoken to and reprimanded, individually or collectively, via the screen, which, by the way, couldn't be turned off.

Today, much has been made of the dangers of interactive

Sculpture: Adam Kurtzman and Margie Crane

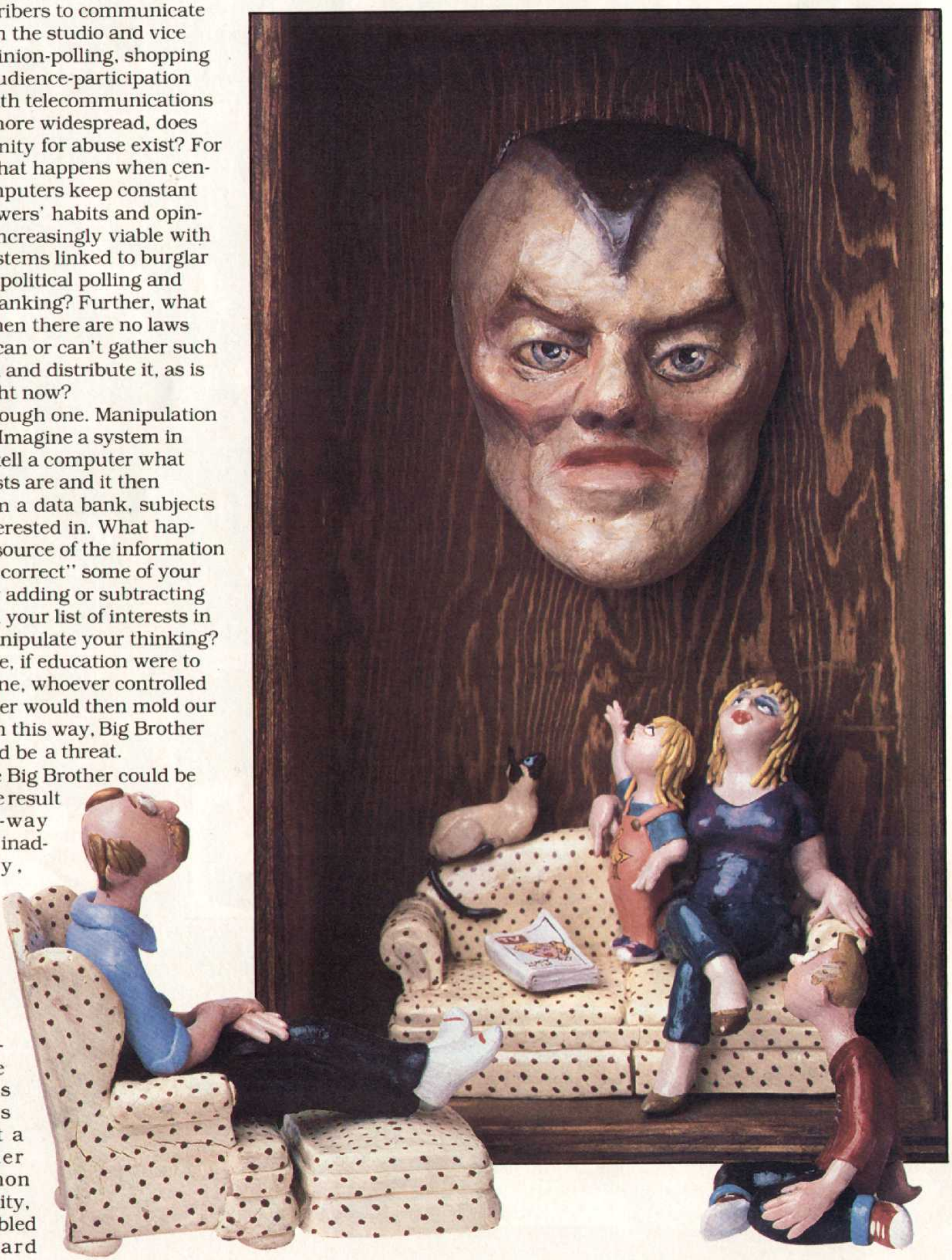

SEND FLOWERS BY INTERFLORA
TO HELP YOU WHEN ORDERING, PLEASE REMEMBER THE CODE NUMBER OF THE ITEMS YOU WISH
KEY
1 CUT FLOWERS AND FLORAL ARRANGEMENTS
2 FLOWERING & GREEN PLANTS
3 SYMPATHY FLOWERS
4 MESSAGES FOR CARDS
5 TO ORDER THROUGH PRESTEL
MATCH CODE SRC MF MCC PRICE
Bill of Rights
BitMap
R
User-friendly
N-ARY
S
QUANTIZE
TEENS ACCESS SECRET INFO
FIGHTING LEAKS OUT MID-EAST
HISTORY OF THE WORLD
H
J
N
Government Taps Credit Data
CONFIDENTIAL

cable television, particularly Warner Amex's QUBE and other largely experimental systems that allow subscribers to communicate directly with the studio and vice versa for opinion-polling, shopping and other audience-participation services. With telecommunications becoming more widespread, does the opportunity for abuse exist? For example, what happens when centralized computers keep constant track of viewers' habits and opinions, as is increasingly viable with two-way systems linked to burglar alarms and political polling and electronic banking? Further, what happens when there are no laws about who can or can't gather such information and distribute it, as is the case right now?

That's a tough one. Manipulation is possible. Imagine a system in which you tell a computer what your interests are and it then selects, from a data bank, subjects you are interested in. What happens if the source of the information decides to "correct" some of your thinking by adding or subtracting things from your list of interests in order to manipulate your thinking? For example, if education were to be put on-line, whoever controlled the computer would then mold our intellects. In this way, Big Brother tactics could be a threat.

But while Big Brother could be the ultimate result of all two-way TV he has, inadvertently, provided us with a means of avoiding a watched-over, monitored state. Simply because Orwell has made us aware that a Big Brother phenomenon is a possibility, he has enabled us to guard

BIG BROTHER IS WATCHING...

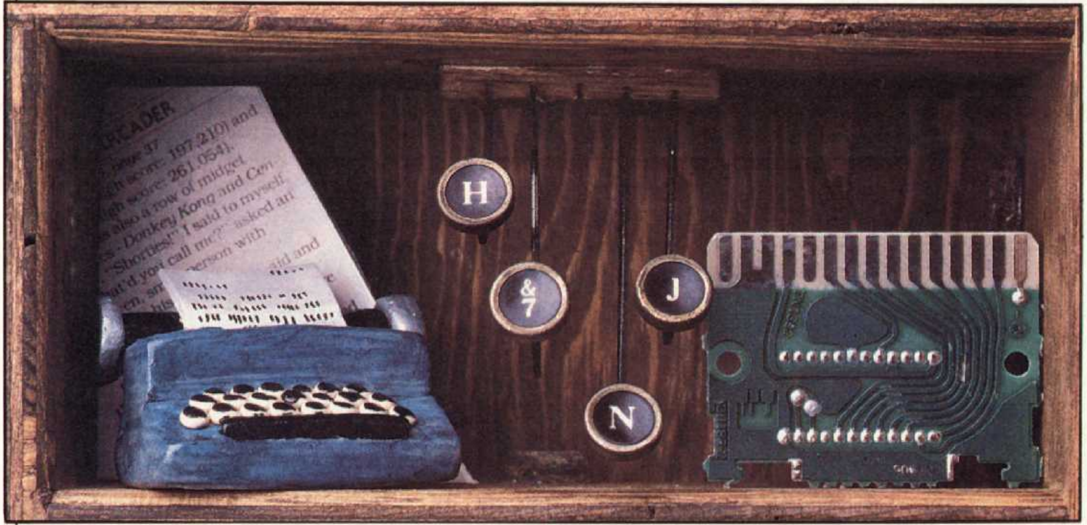


against it. Interactive "telescreens" can be a valuable source of information as long as the public is aware of the dangers inherent in such a system.

Two crystal balls here.

TEENS ACCESS SECRET INFO
HISTORY OF THE WORLD

FREEDOM IS SLAVERY...



IGNORANCE IS STRENGTH...

2. Changing History: When we meet Winston Smith, the hero of *1984*, he is hard at work in his job at the Ministry of Truth, a department set up by the Party to alter, and even forge, back issues of newspapers, magazines and other periodicals to bring past history into conformity with Party doctrine in the present. To meet Party goals, Winston is forced to erase or "reinterpret" entire social, economic and political events, as well as wipe out the identities and indeed, any evidence of the existence of people who have fallen from the ruler's favor. On 1984 terms, Smith is the ultimate rewrite man.

While there's evidence that the Communist countries make clumsy attempts to rewrite the past, such nonsense hasn't happened here, and isn't likely to—there are too many checks and balances within the mass media to allow it. On a less global scale, though, newspaper reports of the activities of some "hacker groups" bring home the fact that the power to alter computerized vital records is indeed within the grasp of many ordinary people. The scene in the movie *WarGames* in which the characters change their biology grades showed an example of how "altering history" is a real threat in the computer age.

Bill of Rights

WAR IS PEACE...

Unlike Orwell's novel, though, where the ordinary citizen was powerless against massive government tyranny, *WarGames*-type incidents in real life show that citizens can have as much power as goverment and large corporations, at least as far as access to information goes. The kind of mass deception that Orwell was talking about looks less and less possible now.

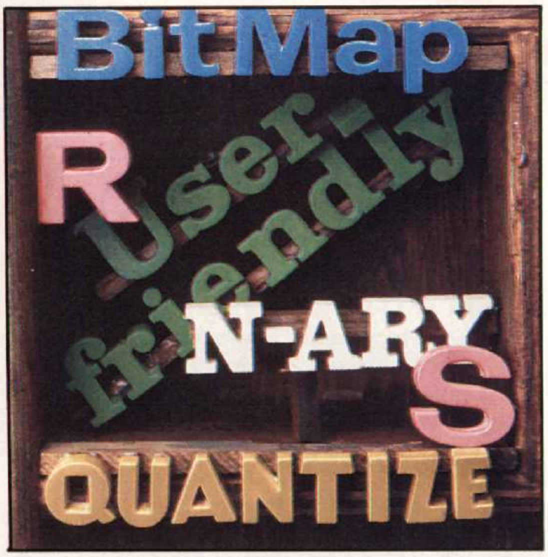
Orwell scores a single crystal ball on this one.

3. The Thought Police: In the book, agents of the Thought Police are everywhere, spying on everyone, ready at a moment's notice to nab and torture any poor soul who dares think negative thoughts about the Party, or indeed, any thoughts other than those concerning the Party, Big Brother and the appropriate rhetoric. Citizens of *1984* furthermore live in constant more live in constant mortal fear of their own children, who are trained at an early age to be cold-blooded and "patriotic" and to report uncooperative parents.

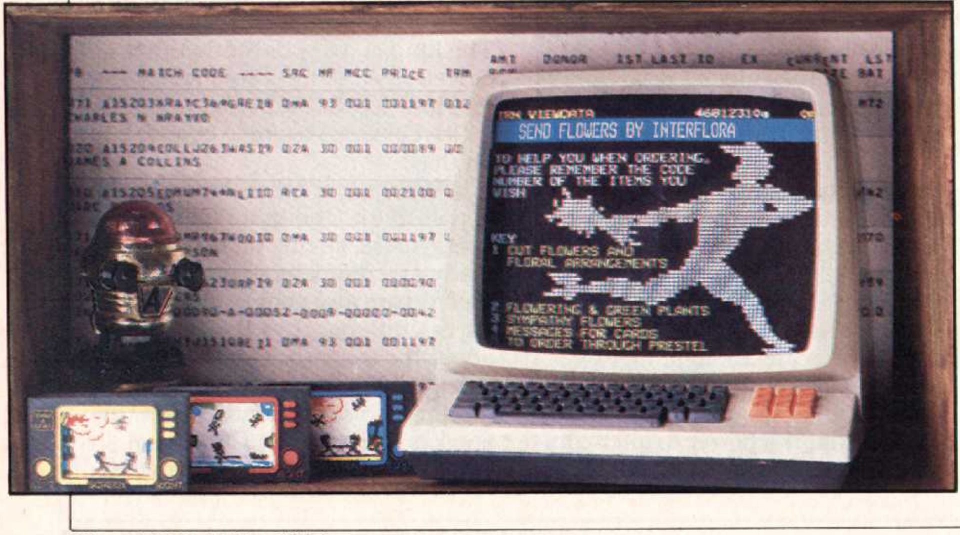
With data bases as accessible as they are, there are certainly dangers of government snooping. Freedom of expression, though, may have been given a real boost by the computer age. Electronic mail is being used by more and more people, as well as electronic bulletin boards and CB radio-type computer accessing. Many hobbyists adopt whole new personalities when communicating via computer—largely thanks to the anonymity it can afford—and express sides of themselves they would normally keep hidden. For the present, at least, computers are giving people more freedom of expression, not less.

Two crystal balls here, Mr. Orwell.

IGNORANCE IS STRENGTH...



FREEDOM IS SLAVERY...


SEND FLOWERS BY INTERFLORA
TO HELP YOU WHEN ORDERING, PLEASE REMEMBER THE CODE NUMBER OF THE ITEMS YOU WISH
KEY
1 CUT FLOWERS AND FLORAL ARRANGEMENTS
2 FLOWERING & GREEN PLANTS
3 SYMPATHY FLOWERS
4 MESSAGES FOR CARDS
TO ORDER THROUGH PRESTEL

4. Constant War: George Orwell painted a world in which the three surviving continents waged an eternal battle against one another, not so that any one of them could win, but so that Big Brother could keep the Party in unquestionable power. Perpetual war was also a good excuse to maintain society's substandard of living, for it provided a psychologically acceptable means of destroying economic surpluses, the margin which makes for a comfortable existence. Thus the book's famous slogan, "War is Peace". As long as war exists, the three superstates could each keep their populations too busy with the military effort (including the search for new and more destructive electronic weaponry) to be capable of thinking of ways of changing the miserable system.

Orwell seemed to foresee a time when all the major powers possessed equal destructive strength of enormous proportion. In addition he took the pessimistic view that even the power of total destruction would fail to alert the nations of the world to the dangers of provoking each other militarily. Regrettably, we must admit that the constant strife of *1984* is all too similar to the real world in 1984.

Computers already play a big part in the nuclear arms race and they may play a bigger one. As things stand now, highly trained soldiers have the direct responsibility for launching nuclear warheads upon orders from the President. In the future, though, the soldiers' task might be left to computers. This would bring us closer to Orwell's *1984* vision in that individuals would become less involved in the major decisions of life and death.

Sadly, Orwell scores three crystal balls here.

5. Death of the Written Word: Winston Smith kept a diary in *1984*—it wasn't illegal, mind you, just dangerous. Writing down your own thoughts, after all, leads to actually thinking them which was strictly verboten.

Today some people worry that

Government ...s Credit Data
CONFIDENTIAL

WAR IS PEACE...

computers will mark the beginning of the end of the written word. When videotex appeared, for instance, doomsayers quickly proclaimed that students would no longer read books. And let us not forget video games—"a hazard to children's health" and a detriment to their learning and development as well, according, at least, to the U.S. Surgeon General.

In reality, book sales to all age levels are growing apace, says the Commerce Department's Bureau of Economic Analysis. This belies the idea that it's curtains for the written word which, in turn, suggests that there is no evidence that people who are active users of electronic media become less interested in books, magazines and newspapers.

As for the next generation, Isaac Asimov wrote in his book, *CHANGE! Seventy-one Glimpses of the Future*, "The book is a shared endeavor between the writer and the reader as no other form of communication can be."

Written communication: four; Orwell: zero.

6. Two Minutes of Hate: During these daily, early morning sessions in front of the telescreen (participation was mandatory, of course), citizens were whipped into a frenzy of hatred, rage and irrational thinking by the image of Goldberg, a renegade Party member who served as the embodiment of all that it was wrong to be in 1984. All hatred was directed at Goldberg and his agents. Goldberg represented the

Continued on page 90

IGNORANCE IS STRENGTH...

MAY THE FORTH BE WITH YOU

How this powerful language stacks up

Those of you who have been driven to desperate acts because you've mastered BASIC and feel there is nothing left in life, take heart. There's always FORTH, a very fast, very efficient computer language that is rapidly becoming the language of professional programmers and game designers.

By Dan Azulay

If you're planning to go to computer camp this summer you may be surprised to learn that in addition to honing your BASIC skills to a fine edge you might be presented with a language you've scarcely heard of—FORTH. All the Atari computer camps teach FORTH and many others do as well. One new computer—the Jupiter Ace—even has built-in FORTH instead of BASIC.

Over 10 years in the making, FORTH still has its supporters and detractors, but it is rapidly gaining in popularity. It's fast, efficient, and relies on a structure that may be closer to the way a computer "thinks" than the structure of BASIC.

At the heart of FORTH is a modern innovation in symbolic logic called reverse Polish notation. Symbolic logic was developed around the turn of the century as a way of codifying sentences. Symbolic logic turns sentences into strings of symbols that look a little like mathematical equations. Using the symbols instead of the words, it's easier and more accurate to analyze various steps in an argument to determine whether the conclusion is valid.

A line of reasoning consists of statements (called "propositions") and connections between them (called "operations"). Given a series of propositions a logician can assign "truth values" to each one. There are only two "truth values"—true or false. There's no middle ground. If this sounds familiar, it should. It's a way of reducing reasoning to a binary code—a series of "ons" and "offs" or "ones" and "zeroes"—just like the code that determines what your computer will do.

There are many kinds of notation in symbolic logic, but the one that has become the most popular among serious logicians is reverse Polish notation. Early ways of symbolizing sentences were pretty much strict translations from English. Reverse Polish notation refined symbolic logic to make the symbols easier to manipulate. This is the theory behind FORTH. This accomplishes two things: your programs run faster and they use up less memory than BASIC programs.

This way of organizing data in your computer's memory also allows it to remember complicated procedures and perform them on command, meaning that you can actually increase your computer's vocabulary to an infinite degree.

FORTH is an excellent language for video games or for computers which monitor industrial and scientific

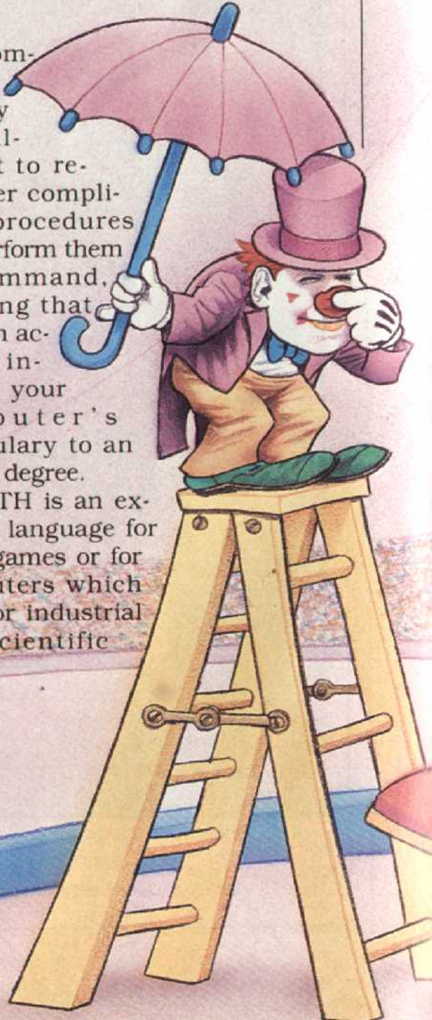


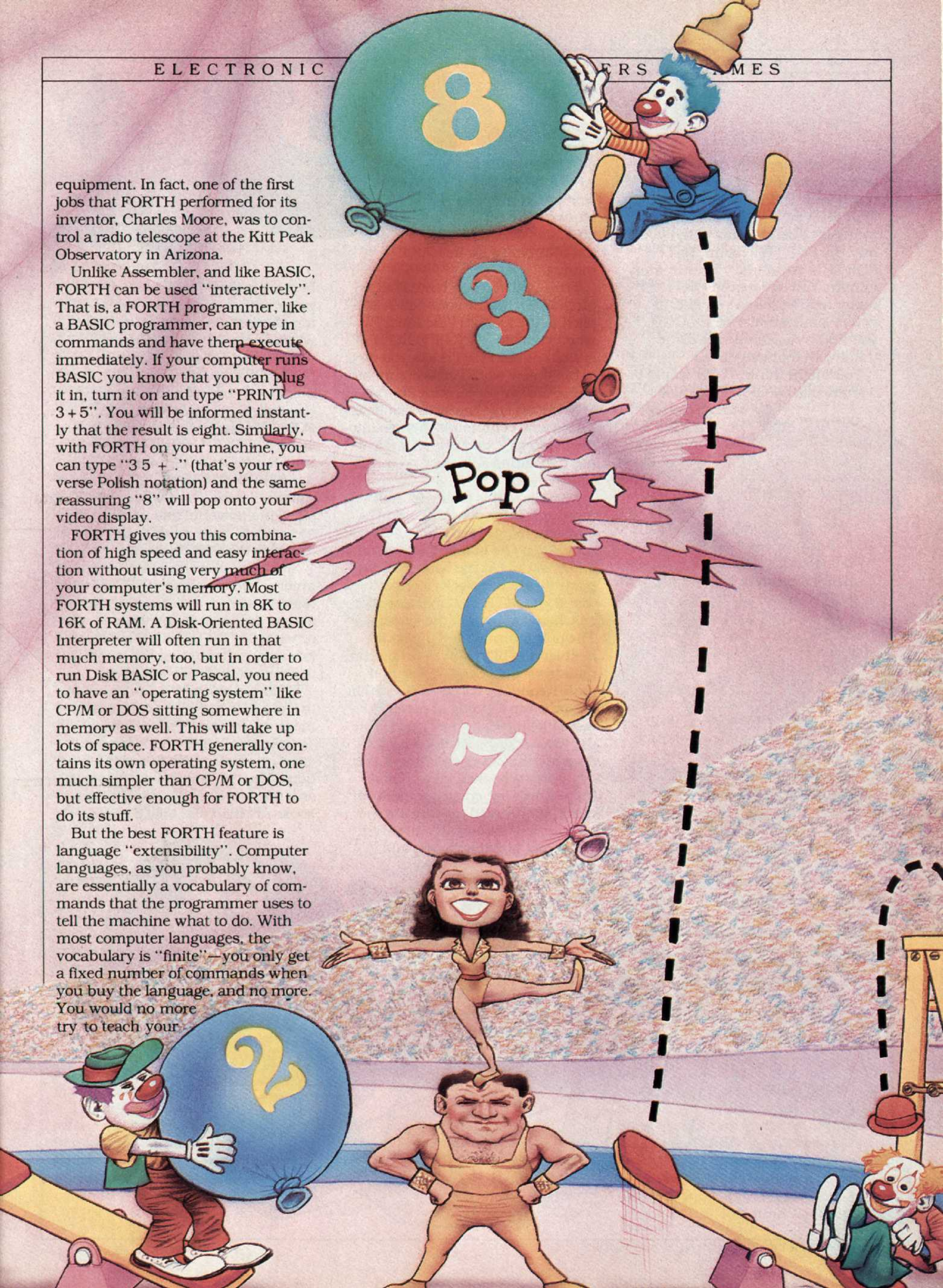
Illustration: Michael Okamoto

equipment. In fact, one of the first jobs that FORTH performed for its inventor, Charles Moore, was to control a radio telescope at the Kitt Peak Observatory in Arizona.

Unlike Assembler, and like BASIC, FORTH can be used "interactively". That is, a FORTH programmer, like a BASIC programmer, can type in commands and have them execute immediately. If your computer runs BASIC you know that you can plug it in, turn it on and type "PRINT 3 + 5". You will be informed instantly that the result is eight. Similarly, with FORTH on your machine, you can type "3 5 + ." (that's your reverse Polish notation) and the same reassuring "8" will pop onto your video display.

FORTH gives you this combination of high speed and easy interaction without using very much of your computer's memory. Most FORTH systems will run in 8K to 16K of RAM. A Disk-Oriented BASIC Interpreter will often run in that much memory, too, but in order to run Disk BASIC or Pascal, you need to have an "operating system" like CP/M or DOS sitting somewhere in memory as well. This will take up lots of space. FORTH generally contains its own operating system, one much simpler than CP/M or DOS, but effective enough for FORTH to do its stuff.

But the best FORTH feature is language "extensibility". Computer languages, as you probably know, are essentially a vocabulary of commands that the programmer uses to tell the machine what to do. With most computer languages, the vocabulary is "finite"—you only get a fixed number of commands when you buy the language, and no more. You would no more try to teach your



BASIC interpreter to understand a new command than you would try to teach your Buick to dance. With FORTH, you also get a fixed number of commands when you buy the FORTH system. But FORTH's vocabulary is ultimately infinite. You can teach FORTH as many new words as you like. (If you're at all familiar with LOGO, you know you can do the same thing with that language.)

You might think: "Why would I want to teach FORTH any new words? Doesn't it have enough of its own commands to let me write a decent program? I can always get BASIC to do whatever I want with the commands in the BASIC manual!"

True, and you can write FORTH programs with the commands supplied in the FORTH "dictionary" when you first get your FORTH system. What FORTH lets you do is to build new words, new commands, out of the core of commands that FORTH already has in its dictionary. These new commands then go into the dictionary, and are available to use in defining still more powerful commands.

Because of this ability to make up more and more powerful commands, programming in FORTH is something like building a pyramid out of blocks. At the bottom of the pyramid are the blocks (commands) that the FORTH dictionary contained when you bought the system. The programmer then builds the next level of blocks by creating commands for the very simplest and most frequently repeated tasks that the program is going to perform, tasks like moving small images on the video screen or retrieving data from some piece of equipment the computer is hooked up to. Then more words are created to perform more complicated tasks using the simple words already created, and so on, building higher and higher levels of the pyramid, until the commands defined become quite powerful. Finally the programmer defines one word—the top block of the pyramid—which will execute the entire program.

Now that we've told you some of FORTH's strengths—its speed, low memory overhead and language extensibility—it's time to explain FORTH's essential peculiarity, the feature FORTH's detractors are the least happy with. Virtually all operations in FORTH involve something called a "stack", and while this stack is a powerful and useful thing, it can seem quite strange and confusing to the FORTH novice.

Stacks were around in the computer world long before FORTH ever reared its head, and they are used in almost every computer system, with or without FORTH. FORTH's stack is only peculiar in that the language depends upon it so completely.

What is a stack? It's simply a way to store data inside the computer's memory. In a stack numbers are "stacked up" right on top of each other, in consecutive memory locations. You can think of a data stack as if it's a stack of anything: plates, books or whatever. Like a real-life

stack, a data stack places new numbers on the top, not in the middle or at the bottom. As more and more numbers are added, the stack becomes higher and higher. On most computer stacks, when numbers are to be taken off, they are taken off the top, so that the first numbers to come off the stack are the most recent ones that were put on it. This method of stack organization is often called (for obvious reasons) "last-in-first-out", or LIFO. FORTH's stack is a LIFO stack.

As we have said, FORTH uses its stack for almost everything it does. For instance, most computer languages use "variables" to store numbers for arithmetic operations. FORTH also lets you use variables to store numbers, but you can't use variables directly in arithmetic operations. Instead, numbers have to be taken out of variables and placed on the stack in order to be added, subtracted, multiplied or divided with one another.

For example, the "addition" function in FORTH just adds the top two numbers on the stack. When a programmer tells FORTH to add, FORTH always reacts by adding the very top number on the stack to the number right below it. After the add is complete, both of these numbers will be gone from the stack, "popped" off, as they say. In their place will be the result of the addition, the sum, sitting at the top of the stack.

Likewise, to perform a subtraction operation, the programmer first places two numbers on the stack, then tells FORTH to subtract. The number on the top will be subtracted from the number right below it, both numbers will be popped off, and the result of the subtraction will be "pushed" onto the stack's summit. This is where reverse Polish notation comes in.

The origin of this term is a reference to the inventor of this form of mathematical notation, the Polish logician Jan Lukaciewicz. Reverse Polish notation is also sometimes called RPN or post-fix notation.

RPN is very different from the arithmetic notation you learned in school. In normal arithmetic notation the "operator" (like + or –) is placed between the numbers to be operated on. For example, the ever-popular equation:

$$2 + 2 = 4$$

In RPN we place the operator *after* the numbers to be operated. To arrive at 4 we would write:

```
2 2 +
```

In BASIC, which uses standard algebraic notation, the computer will display the result "203" if you type in the following command:

```
PRINT (200*2 + 6)/2
```

To get the same result in FORTH the programmer would have to type in this set of instructions:

```
200 2 * 6 + 2 / .
```

This is a post-fix computation of 203. Typing "200" will cause FORTH to put the number 200 on top of its stack. Typing "2" will push the number 2 on top of the 200.

The "*" instruction will cause FORTH to perform its multiplication function, which multiplies the two numbers at the stack top. The 200 and the 2 will now be gone from the stack, and a 400 will be at the top, the result of the multiply command.

Then a 6 will be pushed onto the top of the stack, and the "+" instruction will add it to the 400 below it, leaving a 406 on the stack, and nothing else. Finally, a 2 will pushed on top of the 406, and the "/" instruction will perform a divide, leaving the result, 203, all alone on the stack. The "." is a FORTH command that pops the top number off the stack and displays it on the screen. So after typing in the "." at the end of this calculation, we will see "203", the result.

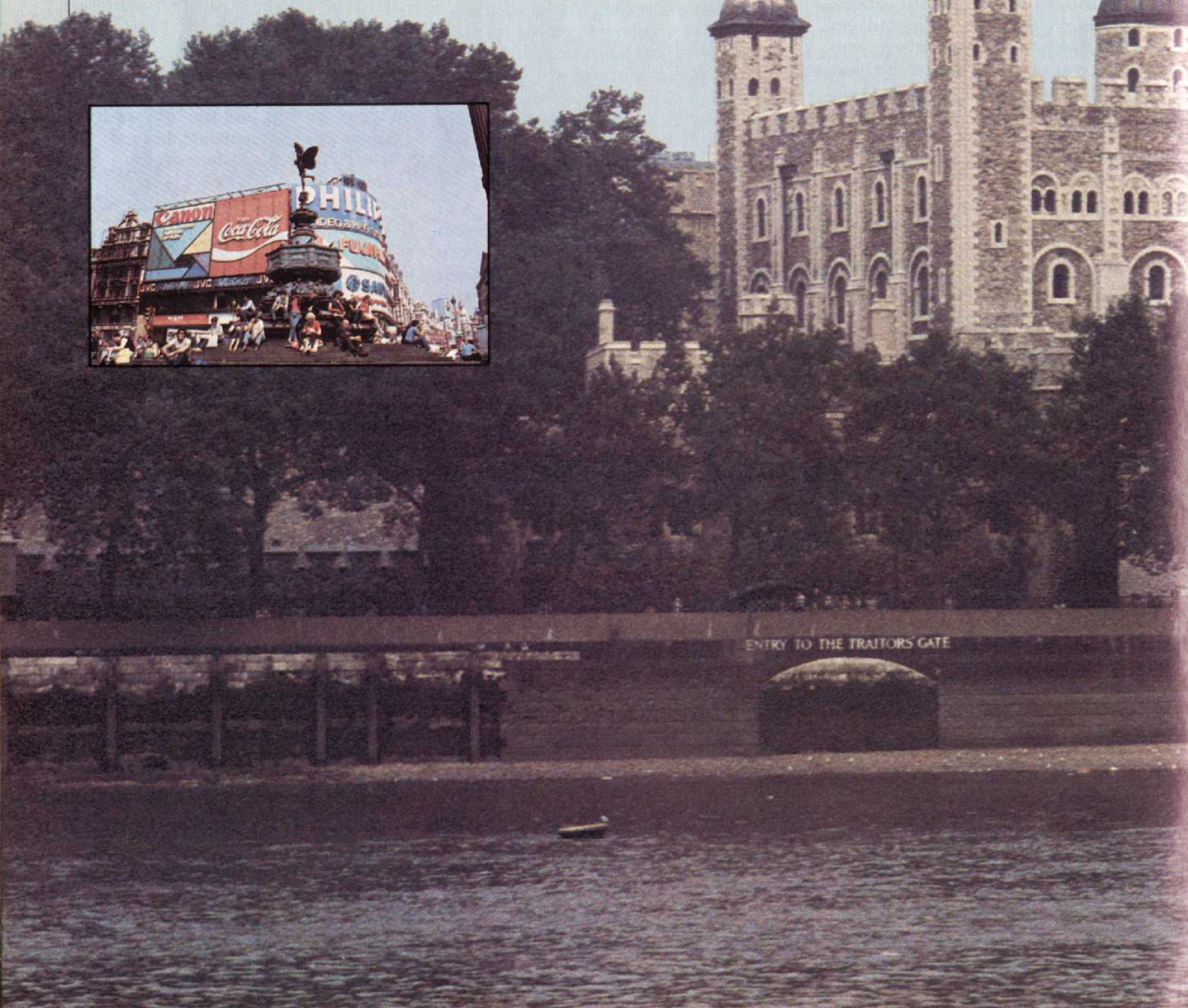
Although this may not look like an advantage at face value, it is this unique way of organizing data that allows for FORTH's real leg-up on other computer languages—extensibility. The computer has such an easy time remembering these stacking procedures that it can duplicate them on command. Instead of filling your programs with GOSUB routines you simply assign a name to your stacking procedure, type in the command, and let the computer do the rest. Each new command can be used as part of a further, more complicated new procedure, which itself can be assigned a name. We can see what a saving this is in computer time and memory.

Obviously it takes more than numbers and mathematical operations to make up a programming language. FORTH arrives at your door with scores of commands in its dictionary. Here's a small sample to give you some FORTH flavor.

Continued on page 91

UNKNOWN ARCADER

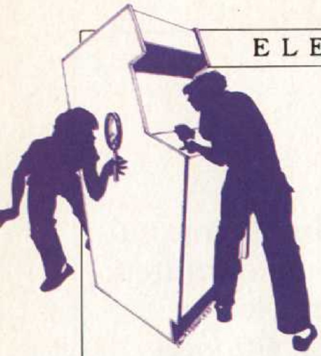
Arcades of London


Canon
Coca-Cola
PHILIPS
JVC
FUJI
ENTRY TO THE TRAITORS GATE

Purple sneaks and all, the Unknown Arcader crossed the Big Pond in his continuing search for the perfect arcade. London, England, where Traitor's Gate admitted many a miscreant in days of yore on his way to the headsman and the block. Tower Bridge, which still stands majestically over the Thames. London Bridge, which did indeed fall down and retired to Arizona. Piccadilly Circus, hard to spell and even harder to cross. And somewhere, there is a corner of a London arcade that will be forever Anytown, USA, home of the Unknown Arcader.

I have always wanted to see England, the ancestral home of many video games. What do I mean by that? Well, I'm no historian or philosopher but without England, where would *Dungeons & Dragons* be? Where would Dirk be now? I'll tell you. Nowhere. Little did the medieval dudes know that they were laying the groundwork of integrated circuitry for centuries to come. There was only one thing stopping me from getting there. The Atlantic Ocean. But a little body of water like that wasn't about to stop the Unknown Arcader. Why, I'd swim if I had to. Fortunately, I didn't have to. The EF staff, recognizing my need and the historical value of Great Britain, gave me a chance to fly there. And a good thing, too. I misplaced my water wings and, to be brutally honest, I never was at home in the water . . .

90-88
MITSUKI



This is London. The sounds you hear in the background are the BBC's war on "amusement arcades" which has made arcade owners bloody indignant. The charges—kids are becoming addicted to the games, stealing money to play them, and skipping school. The arcades of London are like a jungle village the day after King Kong stomped through it. Like angry natives, these arcade owners have the flickering and superstitious suspicion that the merciless BBC attacks are retribution for their sins. "If we had just sacrificed one more virgin..."

TABCAVE SHOES

Getting used to London arcades is like learning to drive on the left. First of all there are the "fruits"—slot machines, wise guy—as well as videos and pinballs. By law, kids under 18 are not allowed in these arcades unless accompanied by a parent, but it's hard to enforce. (Imagine having to drag your mum along every time you wanted to play *Defender*!) Though many of the places look wholesome enough, the British public takes a dim view of them, placing them on a level with bookie joints (which are legal in this gambling-obsessed country). Frankly I couldn't understand what all the ruckus was about I found the arcades safer and cleaner than many of their American counterparts. A few were even world class—which brings us to the real issue: might any of these embattled London arcades be the best in the world?

I pointed my purple sneaks in the direction of the London Leisure Centre on Oxford Street, a big shopping area in London's West End. It's a hard place to miss with its big marquee, left over from the hall's stint as a dolphin theater. A what? Yup, a dolphin theater—sort of a "Marineland of the North Sea." The arcade's a big one with about 83 videos on three levels, but the whole operation takes up only the lobby of the old building. Beyond it is a dark auditorium overlooking a huge, empty pit. Said Mr. Emmerson, the owner, "Unfortunately there was an infestation in the water and one day the operators came in and found all of the dolphins dead." I thought I heard the ghostly echoes of frolicking sea mammals as we fumbled back to the arcade.

The London Leisure Centre used to be a dolphin theatre. These days there are no more mammals posing as fish but there are gamers posing as patriots (right).

London Leisure Centre has no gambling machines so kids can get in unchaperoned—however, Mr. Emmerson says, "We frown on young ones coming in." If you don't mind being frowned on, you can find some of the most serious action in London here. Popular machines include *Tron*, *Pole Position* and *Gyruss*. There were four *Berzerks* and three *Centipedes* (high score: 638,779), but only one *Pac-Man*. I played a few rounds of *Traverse USA* (*Motorace USA* in the States) but the sight of the Statue of Liberty brought a tear to my eye and made me smash into a divider.

Unusual machines included *Jump Bug* by Streets, in which a VW snatches bags of money from the tops of buildings. *Hustler*, a no-frills pool game by Zaccaria, had its share of challengers. Most games were 20 pence (about 30 cents).

The mirrored ball cast a glint on a machine up on the balcony level. I climbed up to find something called *Cosmic Pleids*—not to be confused with *Pleiades*. *Cosmic Pleids* had a handsome planetscape full of missile silos and satellite dishes in green, blue and purple. (I wonder if in Scotland they play *Cosmic Plaids*?)

The crowd was low-key—all rosy cheeks and Brittania jeans. Feeling like the leathery Yank, I johnwayned over to the young manager, a skinny chap with a ready smile.

"How's it going, mate?" I asked and slapped him on the back. He looked embarrassed, laughed abruptly and shuffled his feet.

"Uh, sorry...," he stammered, "I'm not supposed to answer any questions."

Anxious to help, though, he *mim-*

Photographs By Rick Cordell

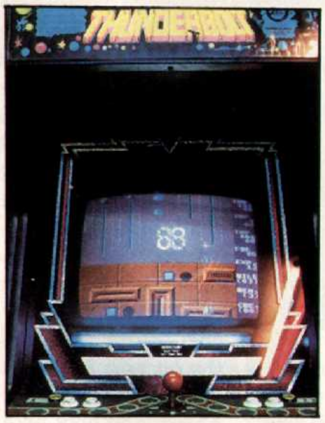
ed that the place had been open 18 months and that Emmerson planned to expand into the defunct auditorium with more videos and some snooker tables.

Wordlessly, he indicated that he himself had come down from Northern Ireland to work, but would be returning home to continue computer school soon.

I thanked him, buttoned my lip and winked. I tried to turn up the collar of my trench coat but I was only wearing a teeshirt and my thumb got caught.

Casino Amusements (reputed to be Charles' and Diana's arcade of choice) is a storefront in a business district at 81 Tottenham Court Road. There are 50 videos and a lot of fruits (machines, that is), but the high-stakes action is behind the scenes. Linked to the arcade by a discreetly placed video camera, manager John Stergides runs a whole gaming empire from his office upstairs. Through a partnership with Universal, he imports game components from Japan and assembles them in his own cabinets at a factory in Cardiff. That explained why I saw so many games in generic cabinets marked only "Unigame," *Krull* and *Sinbad's Mystery* among them.

CASINO
AMUSEMENTS



PROTOTYPE
NEW

Casino Amusements is run by its manager from an office located high above the game room. He surveys his kingdom using monitors linked to the arcade below. So, in addition to video games, this arcade offers you video security devices as well. What a bargain.

Stergides also owns three London arcades and goes to the AOE in the States to pick out his line-up.

"Quit talking and start chalking," droned *Eight Ball Deluxe*, the talking pinball game, as I checked out Stergides' selection. The videos were all in the back of the colorfully lit but quiet arcade. Some of the machines were strangers to me: *Thunderbolt*, *Pro Bowling*, *Burning Rubber* and the fabulous *Star Jacker*.

"New Prototype" read the cabinet header over *Star Jacker*. It's a 3-D space game in a series of walled corridors and you control a small fleet a la *Tac Scan*. The raster graphics are hot stuff and the sound effects are particularly smashing.

Thunderbolt wasn't half bad either. The steely blue and rusty landscapes are supposed to be Earth, but it sure ain't Kansas. Anyway, you fly over it, dropping bombs and firing missiles. Pretty basic but a good challenge.

Speaking of high scores, *Sub Roc 3-D* showed 18,700, *Star Trek*, 2,450, and *Tron*, 51,594. I gave the clientele the once-over—the shopping and briefcase brigade. This is one of the joints with an age restriction. A couple of young guys were giving *Juno First* a respectable workout. Paul, the younger of the two, wore an earring. He was on his break from a nearby chemist shop (drugstore to you), and he explained that he liked this arcade best "because it's a proper one." If he meant clean, it was—from the red carpet to the changemaker's white shoes. Paul's other favorite machines, he said, were *Mad Planets* and *Mr. Do!* (pronounced "dough").

I waved goodbye to Stergides on the video camera. "Eight ball corner pocket," remarked the pinball machine. I went outside and hailed a cab.

London taxis are great. They're taken off the road if they get one dent or rip in the upholstery. They're all the same model, big Austins, with enough room in back for a Bowie concert. This one had an advert inside for "The Counter Spy Shop," featuring such useful items as "Bulletproof apparel," and "Wiretapping systems." I was sorry I didn't write down the address for some of these arcade owners.

The Arabic Centre may not have all the latest machines but it's worth a visit because it's not like any place else you'll see in London—or this side of Damascus, for that matter. It's an entertainment center for Arab visitors to London, with a cinema, video rental, tour and translation services and a video game arcade in the basement. Any kid can wander in and play—you don't have to be an Arab but it helps when it comes to reading the graffiti.

There are about 30 machines, a couple of pool tables and around 5,000 kids. The ceiling is low and the floor is tiled so the sound reverbs like cannonfire in a tin can. Many of the kids are young; some have to stand on tiptoe just to see the screens. For all its boisterousness it's a very friendly place. A nine-year-old named Rana showed me around. She wore lots of gold bracelets with her blue terry running suit. We played a round of *Mazeman* (a dead ringer for *Pac-Man*), and she showed me another of her favorites, *Crazy Kong* (Dr. Mario, I presume). I noted there were also two *Turbos*, two *Astro Blasters*, two *Froggers*, BG Video's *Rally Cross* and *Scramble* among other old machines. There was a *Pleiades* machines spelled "Pliades" on the cabinet header and "Pleiads" on the screen. Those *Pleiades* people should get their act together.

Rana pulled my belt loop. She wanted to know how much money I make. (Americans are all assumed to be rich.) I blushed and mumbled something. She persisted. I made up an astronomical figure. She slapped her cheek and rolled her eyes. "Not enough," she said. I was about to agree with her when she asked me how much she had to pay me. I shook my head, bewildered, and led her to the snack bar.

Have you ever come off a vigorous session of *Astro Blaster* and found you had a desperate craving for felafel? Well, you can get it at the Arabic Centre, along with hummus, zaytoo, fhool, and Pepsi. The snack bar is right in the arcade, beneath a poster of Bruce Lee.

I watched a kid with a Michael Jackson button give *Frogger* a workout: 14,640. High score on *Centipede* was 410,864. So far American champs have it all over the foreign competition. I played a couple of round of *Phobas X* (sort of

SCRAMBLE
FROGGER
FROGGER

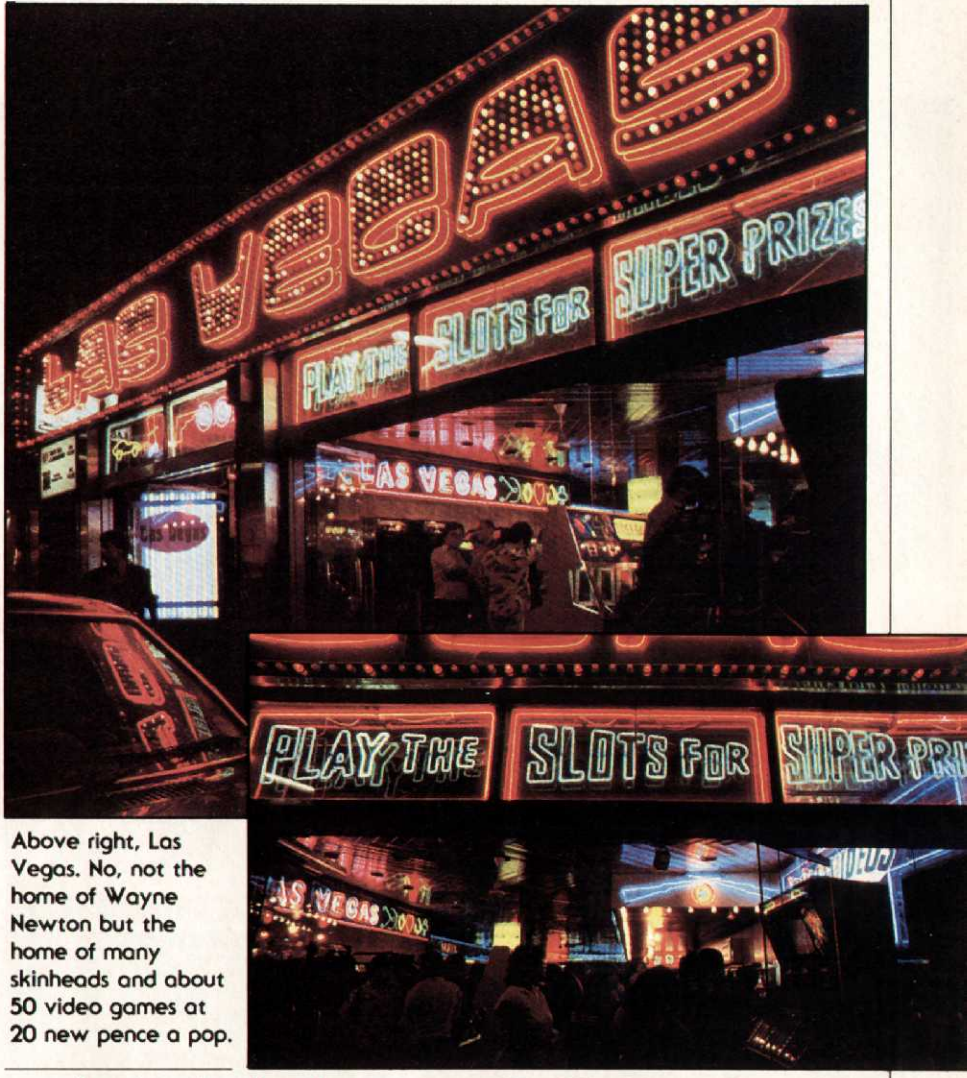
العربي
Arabic Centre

To the left are pictures from the Arabic Centre where the princess Rana gives guided tours. Above and right, the high-tech Crystal Room, the only place in London where UA found laserdisc game ASTRON BELT.

Demon Attack by way of *Phoenix*) and had a felafel. Not bad, but it will never replace onion rings for me. I saddled up and hit the trail.

There were a lot of popular machines I never saw in London such as *Crystal Castles*, *Champion Baseball* and *Dragon's Lair*. I only found one *Astron Belt* machine at an arcade called the Crystal Room, near Leicester Square. The worldwide grapevine of rambling arcaders informs me that *Astron Belt* is all over Paris and has been seen in the thatched roof arcades of Ireland, but as far as I could see (and I have 20/20 vision) this was the only one in her majesty's stomping grounds. If you haven't seen this laserdisc game, start saving your pence. The photographic images will make your trigger finger stand up and say "Howdy." And unlike *Dragon's Lair*, there's no lag time between screens. It's also very easy to learn how to play.

The Crystal Room is in a big tourist area near a lot of the West End theatres. Its gleaming high-tech and neon design make it look more American than the other arcades but the fruits are strictly Brit.



Above right, Las Vegas. No, not the home of Wayne Newton but the home of many skinheads and about 50 video games at 20 new pence a pop.

Around the corner on Wardour Street is another American-style arcade but this one goes overboard in the glitz department. Called Las Vegas, it's got one of the highest-voltage facades you'll ever see. The crowd's pretty high voltage too: tattooed skinheads mingle uneasily with pierced punks—the punkers' spiked hairdos only a tuft or two more dense than their skinhead nemeses. Africans in dashikis glide past *Jungle Hunt* to make conversation with mini-skirted mods, while the aces bang away at *Joust* (1,692,450), *Xevious* and *Star Wars*. This is Soho, London's red light district but also a launching pad for the avant-garde and home of England's film industry.

A sign read, "Try your skill on the latest American pinball machines." There were a dozen or so recent PB releases and about 50 videos. One hybrid gambling machine featured a video horserace, complete with galloping thoroughbreds, screaming spectators and an actual payoff. There was *Popeye*, *Buck Rogers*, and old *Missile Command* and *Breakout* machines. I dropped 20 pence into *Crush Roller*, an animal game with barnyard music. I'd never seen it, there were no instructions, and I couldn't get the hang of it. If you

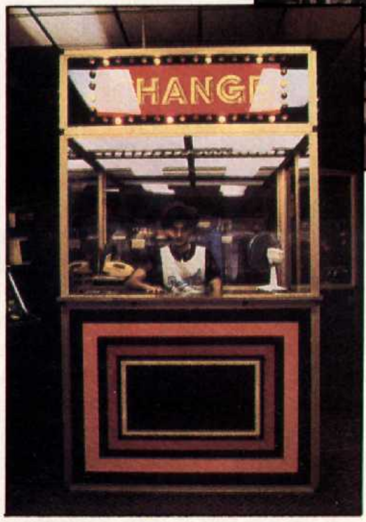
Amusements
FAMILY LEISURE

Fruit
SNAPPA

AMUSEMENTS

know this game, please fill me in. I personally consider it a source of shame not to be able to master a game, and I will live in the shadows of self-contempt until I find out how to conquer *Crush Roller.*

There's a chain of arcades around London called Family Leisure, and while they can't compare to the U.S. chains like Time Out and Chuck E. Cheese, one of their London arcades is so sumptuous, it stands out like a diamond among Chiclets. Family Leisure at 410 Strand has only 20 videos but it is strung with crystal chandeliers beneath a gold mosaic ceiling. There were plush red carpets, also. Unfortunately the machines are nothing to write home about, so I'll make it brief.



Above left, Family Leisure, one of a chain of arcades by this name. Directly above, Amusements, in which Big Tony the six-and-a-half foot Bouncer (above right) and Shahin, the changemaker, (left) work. Shahin once played the part of Gandhi in a school play.

Dear Unknown Mom,

There was a sickly green *Donkey Kong* under a generic "Alca" header and a Japanese version of *Pac-Man* called *Snapper.* The illustrious dot had to avoid enemies such as Oikake, Machubuse, and Otoboke. *Buck Rogers* was displayed under a "New Video Game" sign and *Galaga* went under the alias, *Galactica.* Your loving son, UA

High scores at this fancy garage were: *Tac Scan*, a mere 27,300 and *Moon Patrol*, 13,000.

"You can gussy it up," I thought, "but if the cock don't crow you can't tell the time of day." I have no idea what that means, but all this British pomp and splendour was bringing out the yokel in me.

Shuffling from one arcade to another in starchy old England is pretty ignominious work and my recent humiliation with *Crush Roller* had me longing for the shopping malls of home. But a voice inside me whispered, "Blimey, guv, not to worry. The next one might be the Queen's pajamas."

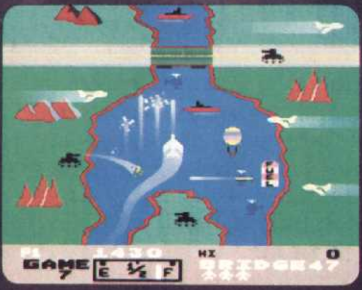
Well, the next one wasn't the Queen's pajamas or even her royal socks, but it's worth mentioning as the only arcade with a sound system. The system consisted of a small boom box belonging to the changemaker, Shahin. Of course, when the owner comes in Shahin has to turn it off. The place is humbly called "Amusements" and is at 282 Pentenville Road.

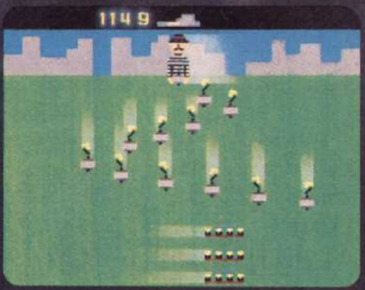
I considered dropping 80p and rewriting the high scores on each machine, but, nah, that would have been the ugly American thing to do.

Suddenly I realized I was just a lonely boy out of my country. Get me to an IHOP before I have to eat one more continental breakfast! How do they expect a guy to score on just tea and toast? Cheerio, London. Next stop, the colonies! ☐

CAUTION: THE FIRST ACTIVISION® GAMES FOR YOUR ATARI® 5200™ WILL BLOW YOU AWAY.

CAROL SHAW'S
RIVER RAID
ACTIVISION FOR THE ATARI® 5200™
RIVER RAID
KABOOM!
BY LARRY KAPLAN
ADAPTED BY PAUL WILLSON
ACTIVISION FOR THE ATARI® 5200™
KABOOM!


GAME 7
E ½ F
1430
HI 0
BRIDGE 47



The brilliant new arcade-like graphics are startling.

The sounds will astound you.

The new challenges are tough. Taking all the reflexes, stamina and nerve you can muster.

Carol Shaw's River Raid.™ The mission: destroy bridges along the unpredictable 'River of No Return'... Choppers, 3 o'clock!... Fighters closing!... Tanks, shooting back!... Refuel! ... Too late!... And if you have the nerve, launch your raid upriver at bridge 5, 20 or even 50 where it's really tricky.

Kaboom!® adapted by Paul Willson. A maniacal game of catch... with bombs... that keep coming ... faster and faster... to a frenzied rendition of the 1812 Overture. And now when two play, one can be the bombardier and one can be the bucketeer.

Get River Raid and Kaboom! The first Activision games that take full advantage of your Atari 5200. Want to know what's next?

Send for our free quarterly Activisions™ Newsletter. It has new game previews, record scores, profiles of our designers and lots more!

ACTIVISION. We put you in the game.

Mail to: Activision, Inc., Consumer Relations
Drawer Number 7287, Mountain View, CA 94039
Send my free Activisions™ Newsletter.

NAME ____________

ADDRESS ____________

CITY/STATE/ZIP ____________

Allow 6-8 weeks for delivery of your first issue.

1. Which game system(s) do you own? (1)
__ Atari® 2600™ (1) __ Intellivision® (3)
__ Atari® 5200™ (2) __ ColecoVision™ (4)

2. How old are you? (2)
__ 6-11 (1) __ 18-24 (3)
__ 12-17 (2) __ 25 or older (4)

Atari® and 5200™ are trademarks of Atari, Inc.
Intellivision® is a trademark of Mattel, Inc.
ColecoVision™ is a trademark of Coleco Industries, Inc.
© 1983 Activision, Inc.

How to make a MILLION

More ways to make money programming

The law of supply and demand goes something like this: the greater the demand the greater the need for supply. The demand for computer software is reaching alarming heights, therefore the need for software programs is increasing proportionately. Similarly, the channels through which you can sell your unique, wildly innovative, never-before-seen games are getting wider. Lately, a whole network of agents, societies etc. has grown up dedicated to getting your programs to people who want them and making you successful beyond your wildest dreams.

By David Tuller

•In November, 1983 Talmis, Inc., a Chicago-based marketing information and consulting company, sponsored a three-day conference in Boston for 400 software programmers and 250 publishers. In addition to a series of seminars, lectures, and workshops, the conference featured the 'Great American Software Contest', with $30,000 in prizes for the most innovative wares on display. And, most important for many of those present, the event—the first-ever of its kind—offered programmers and publishers seeking new products, an ideal forum for establishing contact.

•In 1982 Dick German, a former computer consultant for the government, founded the National Association of Free-Lance Programmers [NAFLP], a professional organization that already has 1,300 members. For $48 in annual dues, each receives a monthly newsletter with articles on such diverse topics as contracts, marketing opportunities and field-testing software. Every issue also includes a listing of many of the 500 buyers currently in the association's files. While most of these are software publishers, a number are magazines and newsletters seeking both programs and articles of interest to computer users.

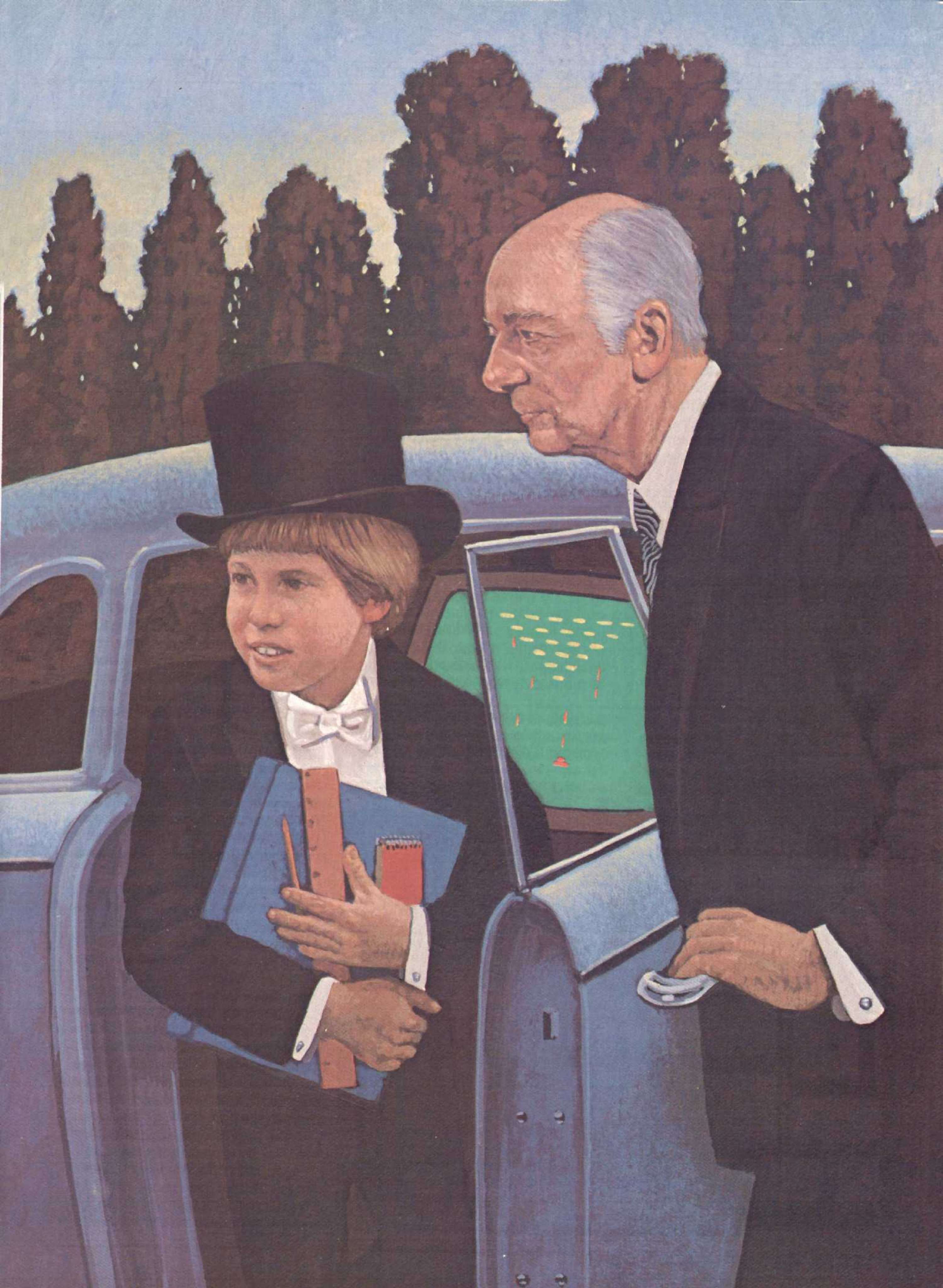
•The Software Agency—the brainchild of New York literary agent Jay Acton—is one of a handful of firms providing programmers with the same services agents offer book authors. Early this year Acton formed a consortium with two other agencies; they handle both software and computer books, selling them not only to software publishers but to established book companies like McGraw-Hill, Harcourt Brace Jovanovich and Random House, all of which have recently introduced software lines. While The Software Agency currently represents just a handful of authors, Acton predicts that within two years the output of programmers in his stable will equal that of the literary segment of his business. For their efforts, software agents garner a commission of ten percent on all sales.

There's a basic tenet of supply and demand that is so simple that even the least mathematically inclined of us is able to follow it: the greater the demand, the greater the supply should be. As the number of people purchasing computers rises meteorically, the cry for more and more quality software gets louder and louder. Logical, right?

Good And Bad News

Further logic suggests that as the demand for software grows, so do opportunities for freelance programmers to sell their wares. In fact, experts say that up to three quarters of the software sold has been developed by freelancers as opposed to in-house staff at software firms. This is the good news.

The bad news—and it isn't even that bad, really—is that the more people who own computers, the more people there will be who learn how to program and the greater the competition will become. But who wouldn't compete when interesting, imaginative and creative programs—whether games, business or home application—stand the chance of racking up anywhere from $10,000 to $500,000 or more for the programmer?



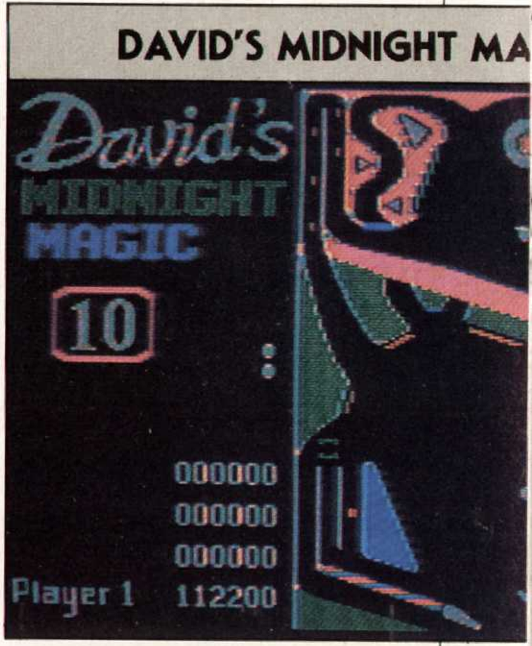
More logic: As opportunities expand, so do the ways in which programmers and publishers can find each other. Time was, just a year or so ago, that publishers seeking talent had to call up retailers for referrals, attend computer club meetings and place ads in the myriad computer mags. And while software writers have always sent off their creations to the leading firms, they have had no medium through which to find out about smaller publishers who might be hungrier for new products.

Now, however, that's changing. Publishers still rely on informal methods to discover programmers and the majors still receive an avalanche of submissions. But such developments as the creation of the National Association of Free-Lance Programmers, the Boston conference and the appearance of software agents have created a much more efficient means of introducing those with programs to sell to those with cash to spend.

That, points out German, was the major impetus behind his decision to form NAFLP. And Talmis president Jeanne Dietsch had the same idea. "Publishers kept coming to us and asking where they could find quality programmers," she explains. "Up till now, they've stumbled upon them mostly by accident, not through any established channels. Our goal here was to try to create those channels."

Pay For Play

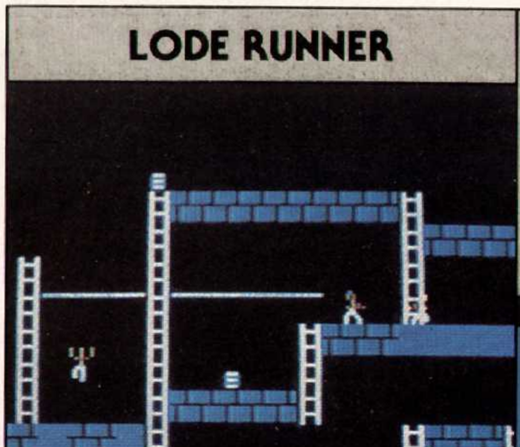
As we all know—and this is part of what makes the field so attractive—the potential financial rewards are great. Payments are almost always awarded on a royalty basis, usually in the range of ten to fifteen percent of a publisher's net profit. For example, a programmer might receive $1.50 for each disk of a game sold at retail for $30. Even if it's only moderately successful—selling, say, 10,000 copies—that's still $15,000 in your pocket. And if it blasts off into hyperspace, with sales of hundreds of thousands in all different formats, an author can easily make well into the six-figure range.



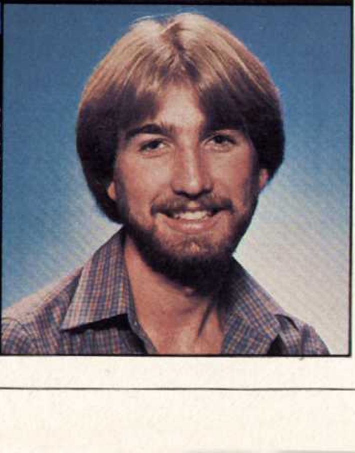
Take Doug Smith, for example, the 22-year-old University of Washington student currently riding high with his first game, *Lode Runner* shipped by Broderbund this fall. The goal in this strategy game is to gather the gold buried in a room full of bricks, drilling for the treasure while evading pursuers by jumping and hopping from ladders to platforms to ladders again. *Lode Runner* features an astounding 150 screens of play, each building upon the one before, and includes a game generator that enables the player to create additional levels of his own. So far the program has received great reviews—one critic called it "the nearest to perfect that we've ever seen" while this magazine gave it three joysticks — and Broderbund expects it to be as big a hit as *Choplifter*.

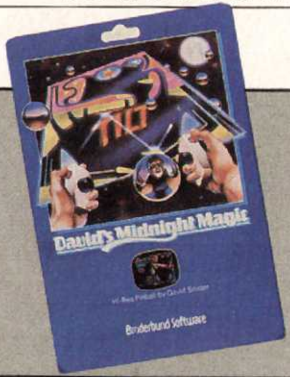
How is Smith reacting to all the hoopla—including the fact that his baby is expected to net him over a quarter of million dollars from floppy disc sales alone, with cartridge versions an added bonus? "I'm getting kind of used to it now," he admits in his soft, low-key manner. "Really, when I first began it I had no thought of selling it, but my 13-year-old nephew, among others, was so enthusiastic about it that I thought it might be marketable. I figured if I made a bit of money, it

Doug Smith (below) tapped into a mother lode with his first game LODE RUNNER. Broderbund bought it and expects it to be as big a hit as CHOPLIFTER. David Snider, above, is one of Broderbund's reigning software stars largely due to his creations DAVID'S MIDNIGHT MAGIC and SERPENTINE.



Lode Runner
Broderbund Software





would be great. But $250,000? It never occured to me that was possible."

It looks as if the game could boost Smith into the ranks of the select group of computer programming stars—folks like *Choplifter* creator Dan Gorlin and David Snider, author of *David's Midnight Magic* and *Serpentine*. "Like book publishing, it's getting to be very much a name system", points out Acton, "with the best-selling authors getting better deals the next time around. And as they gain recognition from the public, software publishers will package the software by promoting them."

Not everyone, of course, will hit the jackpot, especially not the first time around; that, says German, is why only a quarter of his association's members are full-time programmers, while 75 percent maintain other jobs. Nonetheless, the field remains wide open—and the secret is to offer companies something that neither they, nor their competitors, have already. In terms of games, that means staying away from tired old formulas.

It's not a good idea, for instance, to submit space war games or submarine games or climbing games. There are simply too many of those already available and creating a variation on an old theme raises the odds against your success. You set yourself up for comparison to past favorites and that is singularly self-defeating. Software companies used to try to get as many games as possible out as quickly as possible but the situation has changed because the audience has changed. A more sophisticated computer user has sprung up and he/she is demanding more complex programs. A successful game today must have many screens and levels of difficulty. Some good categories include strategy, role-playing and adventure games—a switch from the strictly action-oriented games of the past.

Succeed In Business

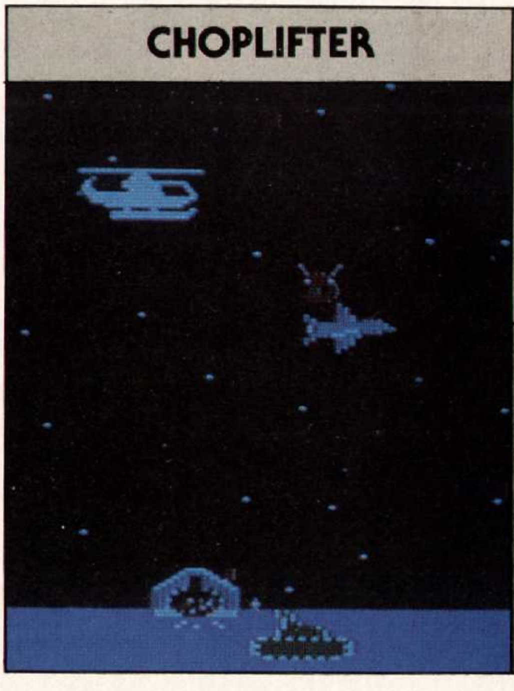
But you needn't restrict yourself solely to games if you don't want to. There is also a growing need for programs in such areas as word processing, education, home budgeting, stock market analysis, checkbook balancing or "bundled" software combining several functions—anything, in fact, that will broaden the ability of the consumer to make the most of his home computer system. It is important, however, to concentrate your efforts on areas you know best. Don't try a spreadsheet program if accounting is not your strong suit. And if you're thinking of developing a program for a specific firm, find out what they're looking for first. Taranto & Associates, for example, are seeking accounting programs, while The Alien Group, Micro Applications Group, Windham Software, Realty Automation and Human Systems Dynamics are interested in audio, database, medical, real estate and statistics programs, respectively.

Most firms have author submission packets that they send off to anybody on request. These contain information on the kinds of products they want, the forms submissions must take (most require documentation and printouts along with the software itself), and any number of helpful hints.

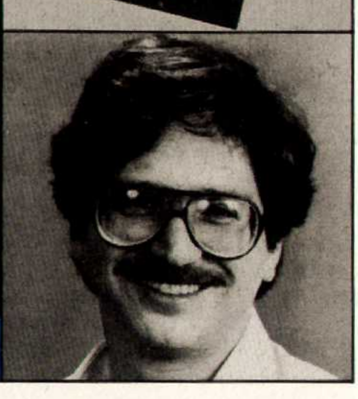
For the most part, publishers are interested only in programs written in machine language and they will

Continued on page 92

And speaking of CHOPLIFTER, Dan Gorlin found himself in the spotlight of success with this game. Originality is an important element to include in new games. CHOPLIFTER is original in that it's not your typical war shoot-'em-up. You receive no points for shooting enemy craft. You receive points for rescuing hostages.



CHOPLIFTER!
Brøderbund Software



YOUR GAM

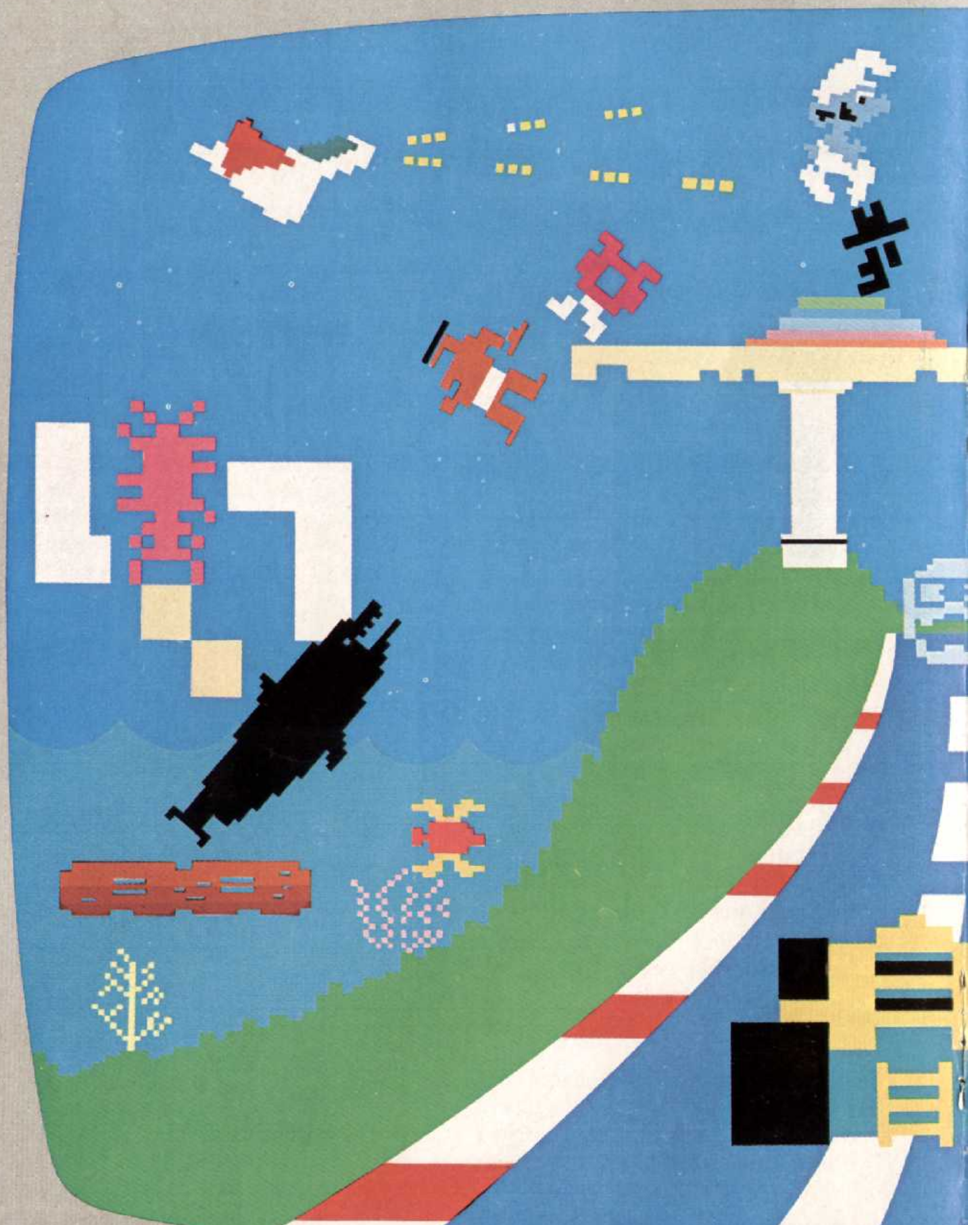
Win A Starpat

Five lucky *EF* readers are going to win a Starpath Supercharger and a complete library of Starpath games. How? Well, it all has to do with the game screen on the right.

This game screen is no ordinary game screen. No sirree. It's a very unique game screen for several reasons, one being that you'll never find this particular game in any retail store no matter how hard you look. The other reason, and this is the most important one, is that hidden in this screen are elements that have been taken from 25 (count 'em) different games. Some of the elements will be readily identifiable. These are just there to throw you off. We just put them there to lift your spirits so we can dash them to pieces right after. How? Well, there are other elements that will involve a lot more work to identify correctly. But it will be worth it. Remember the prize.

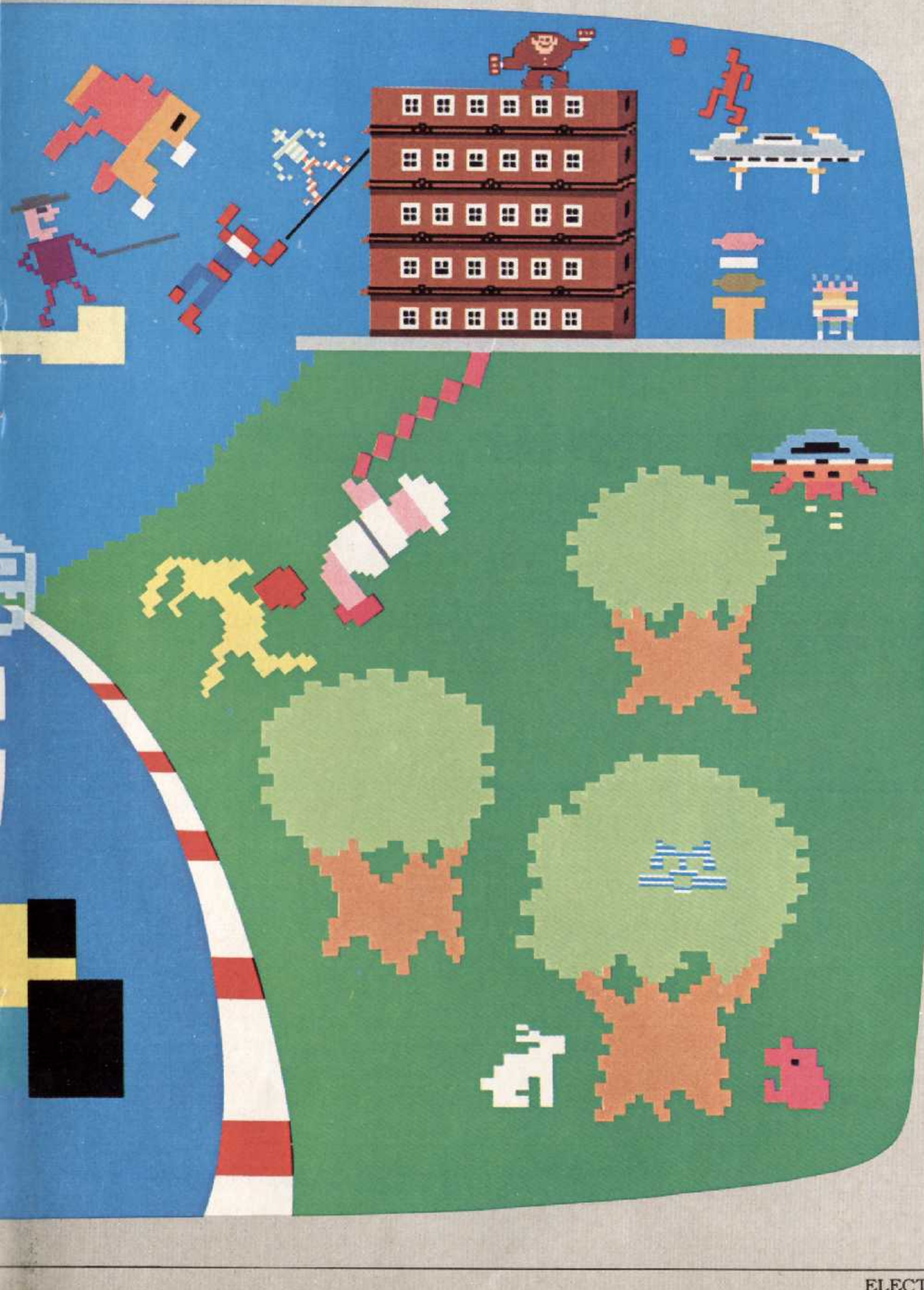
Okay. Here are the rules:

Using the entry blank and list to the right, list all 25 games that are represented by one or two elements in the composite game screen. Although some games may be represented more than once, this does not count as two separate games. For example, if there are two elements from, say, *Berzerk*—the robot and Evil Otto—that is still only one game and may be listed only once. You don't have to identify which characters are from what game. A simple list with 25 correct game titles is enough. And the names don't have to be in any specific order, either. Look carefully. Not all the elements are necessarily characters from a given game. That's as much of a hint as you'll get from us. Once you've gotten what you think are the correct games, *print* them along with your name, address and phone number on the entry blank, cut it out and mail it to: Your Game of Games, *Electronic Fun*, 350 E. 81st St.,



E OF GAMES

h Supercharger



New York, NY 10028. Entries must be postmarked no later than January 31, 1984. In the event that there are more than five entries with the correct answers, a random drawing will be held. Good luck!

NAME ____________________

ADDRESS ____________________

CITY ____________________

STATE ______ ZIP ____________

PHONE ____________________

1. ____________________

2. ____________________

3. ____________________

4. ____________________

5. ____________________

6. ____________________

7. ____________________

8. ____________________

9. ____________________

10. ____________________

11. ____________________

12. ____________________

13. ____________________

14. ____________________

15. ____________________

16. ____________________

17. ____________________

18. ____________________

19. ____________________

20. ____________________

21. ____________________

22. ____________________

23. ____________________

24. ____________________

25. ____________________

Coleco's Rocky is a heavyweight

ROCKY

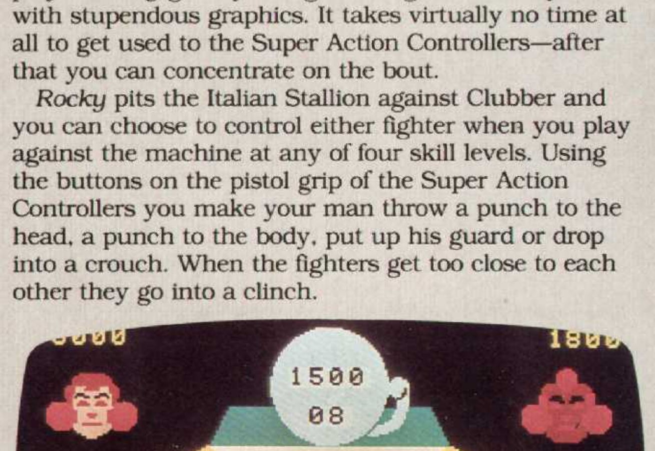
Coleco/ColecoVision

By George Kopp

Kid! Listen to me! He's tired. He's dazed. But that don't mean you can go out there and sing a lullaby to him. Keep your guard up. Go into your crouch and then let him have it. Head, body, head, body! This is the big one. Think of those kids pulling for ya. Think of your mama. Think of the ten million bucks. But get out there and nail that cupcake to the canvas!

You've heard of the old one-two? Get ready for the old four-one. Coleco's *Rocky* for the Super Action Controllers is a masterpiece of sports simulation. Either against the computer or head to head with another player *Rocky* gives you high boxing drama coupled with stupendous graphics. It takes virtually no time at all to get used to the Super Action Controllers—after that you can concentrate on the bout.

Rocky pits the Italian Stallion against Clubber and you can choose to control either fighter when you play against the machine at any of four skill levels. Using the buttons on the pistol grip of the Super Action Controllers you make your man throw a punch to the head, a punch to the body, put up his guard or drop into a crouch. When the fighters get too close to each other they go into a clinch.



The computer does the scoring, and no matter how much training you've done with the medicine ball it's not to your advantage too take to many punches. Get your licks in and avoid your opponent's blows. The joystick will move your man around the ring, although the fighters don't circle each other.

The scoreboard shows each fighter's level of daze and fatigue. Keep an eye on these all the time. When the daze level shows your man has advanced amnesia it means one more good hit will send him down. At the same time, if your opponent is ready to see stars, move in for the coup de grace. When the fighters go down they stay down for a mandatory eight-count, unless the ref decides to stop the fight. The bout lasts 10 rounds and the scoring is displayed after each 60-second round. The winner dons the heavyweight belt (whether WBA or WBC isn't clear) and does a victory strut to a famous movie theme. Guess which one. Yo, Adrienne!

The most effective combination is the four-one—out of the crouch with a quick jab to the chin. Then get your guard up again in a hurry.

SPACE SHUTTLE

Activision/Atari VCS

By George Kopp

We continue to be amazed at the ingenuity of designers for the Atari 2600. First they got rid of flickering images. Then they got rid of boxy-looking characters. Then they added amazing color gradations and tricks of perspective. But it took Activision's Steve Kitchen to reach into the nooks and crannies of VCS circuitry and use every available micro-inch of computer space to produce *Space Shuttle*, a flight simulation better than any we've seen for either the Apple or Atari computers.

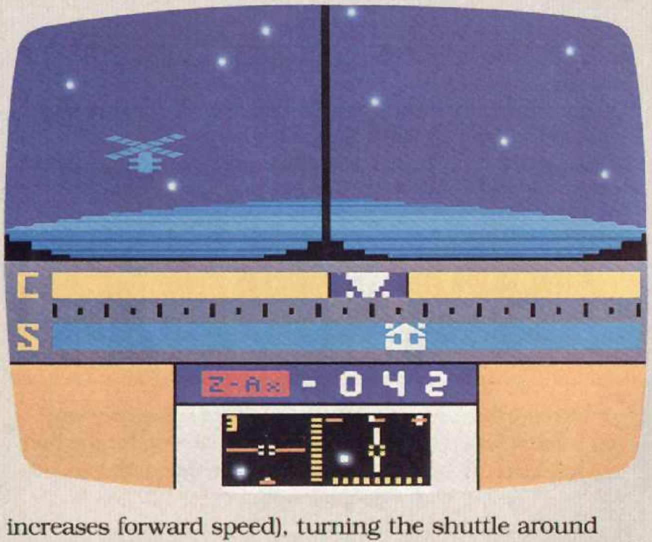
Space Shuttle transforms your entire VCS into an instrument panel. The black-and-white/color switch, the difficulty switch and the game option switch all play crucial roles in the successful completion of your shuttle mission, along with the joystick and fire button. In addition, Kitchen has done painstaking research into the actual shuttle program, including in his simulation numerous tasks that the astronauts themselves must perform during the various phases of shuttle flight. Mastering *Space Shuttle* is like a basic course in space flight technology.

Forget about a four-page instruction sheet that you can toss after five minutes. *Space Shuttle* comes with a 20-page Flight Manual, an overlay for your VCS control panel and a "cheat sheet" (NASA-approved jargon) summarizing the procedures you must observe throughout your flight. Your mission in outer space is to rendezvous with a satellite anywhere from one to six times. First locate the "bird" on radar, establish the orbital coordinates for both your spacecraft and the target, then maneuver your spacecraft into position.

hits & missiles

After successfully completing your docking missions you must bring the shuttle into its re-entry trajectory and guide it safely into Edward AFB.

A partial list of actual shuttle procedures you must perform in *Space Shuttle* includes opening cargo bay doors once in orbit (they act as radiators to diffuse heat), slowing down to dive (in actual space flight a dive increases forward speed), turning the shuttle around 180 degrees before re-entry (again to slow the spacecraft down), positioning the re-entry angle of your ship to prevent burn-up when you hit the atmosphere and, of course, bringing down the landing gear before touchdown.



Space Shuttle is not easy to master but as you get better you can increase the difficulty of your flight. If you reach the "Commander" level of competence—six consecutive dockings with at least 8,000 units of fuel remaining—you're rewarded with a graphic of commander's wings on the screen. You'll have to work very hard to see this one.

Space Shuttle is the most advanced VCS game yet. It's difficult and complicated no matter how good you get or how often you play. It requires a degree of commitment we've seldom seen outside of computer text adventures, but unlike adventure games it offers immediate gratification when a difficult maneuver has been mastered. If you've bought a computer and put your VCS in the closet, dust it off for this one.

Designer Steve Kitchen recommends that two people pilot the shuttle—one to monitor the status of the mission and give commands and the other to work the controls and execute them.

OMEGA RACE 🕹🕹

CBS/Atari VCS

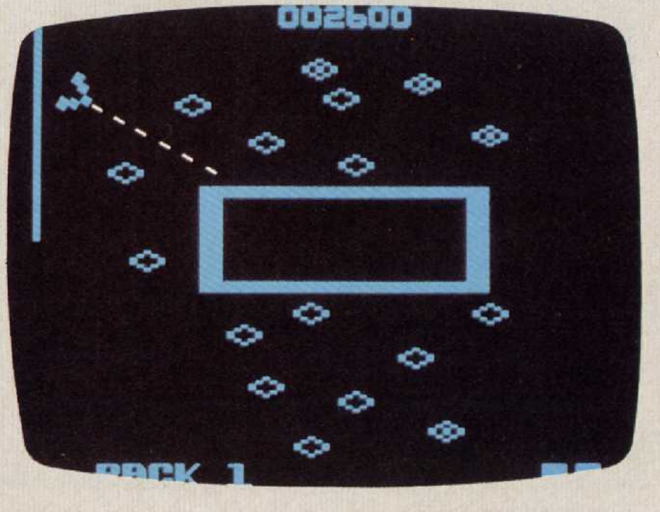
By William Michael Brown

O my mighty Omegans—what peculiar tricks fate has played on you! After countless eons of patrolling your space colonies, defending them against the baddest cats in the Universe—and doing it so well that now you must actually search for worthy opponents—you decide to come to Earth in the form of a VCS cartridge. And what happens? You guys end up looking like something the dog chewed on.

Maybe it's a prejudice induced by being a fan of the arcade original, but this *Omega Race* looks so different (and worse) that I almost can't bear to play it. Not that it's an entirely different game: it's still the basic spaceship-against-arenaful-of-aliens contest.

But the graphics are frankly awful. There are no arena-enclosing bounce-wires that light up when you hit them; no reserve fighters sit comfortably in the middle safety zone; the various types of enemy droid ships are nearly indistinguishable from each other (except when a spinning Death Ship takes off); and *everybody* flickers.

The gameplay is almost as bad: different, inconvenient, frustrating. Instead of the arcade option that allowed you to start with three, six or even more ships, this *Omega Race* gives you three lives. Want



more? Tough. Once you've used those three up, you have to press reset and start another game. The same problem obtains with the limit on your laser bolts—you can only fire two at a time. The difficulty of hitting anything with such woefully inadequate firepower is further complicated by a fuzziness in the direction your ship is pointing.

The problems don't stop there, but why go on? If you've never seen the arcade game, you might actually enjoy this cartridge. But if you were waiting for it to bring home the arcade thrill—forget it.

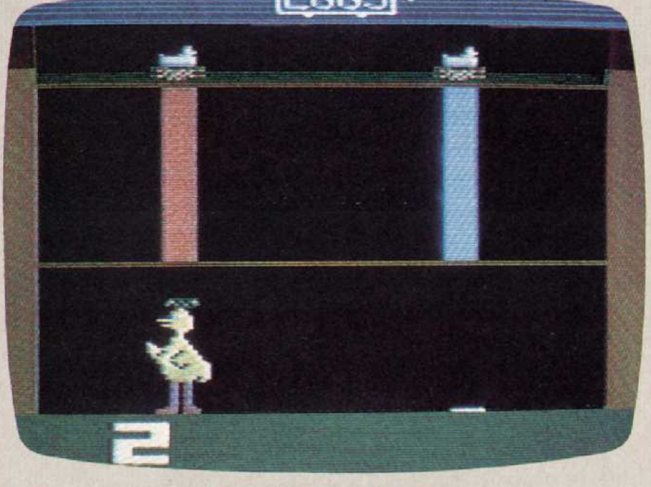
The Booster Grip that comes with the game works great, but if you're having trouble controlling direction, try sticking it to your VCS joystick with some double-sided tape.

BIG BIRD'S EGG CATCH 🕹🕹🕹

Atari/Atari VCS

By Suzan D. Prince

After suffering through a cadre of mediocre egg-catch games, here—finally—is the genuine article. Another learn-while-you-play cartridge from the Children's they need to position him quickly and carefully under Television Workshop, the game features everyone's favorite overgrown fowl in a one- or two-player race to retrieve eggs laid by a variable number of squawky hens at the top of the screen.



The game's basic skills teach directional movement (left and right), the importance of good timing, and of course, counting. Levels one to three have our yellow-feathered friend lining himself up under the left-most hen to give the player an idea of what's going on. In levels four to 10, however, players are on their own. Using the special controller CTW designed for Atari, the appropriate hen in order to win the eggs.

At the most difficult levels, children face such challenges as hens that lay "invisible" eggs that only become visible at the end of the chute; disappearing chutes that must be memorized and speedier versions of the easier levels.

For the target age group, three to seven, there's lots of action, color and sound. The designers are to be commended for the Bird's excellent animation. The best effect by far, though, comes just after Big Bird misses an egg.

At this point the screen shifts to a close-up of our hero, who launches into a delightful dance to the tune of *Turkey in the Straw*. Meanwhile the number of eggs successfully caught is displayed both graphically and numerically at the bottom of the screen.

This effect deserves rich praise because it heartily encourages a young player to continue the game despite a miss—a much-needed contrast to so-called educational games that discourage children by making sad faces, saying "no, that's not right," etc. *Big Bird* will definitely be a hit with the kindergarten set, while parents might just find themselves sneaking in a round every now and then.

Watch the hen's movements in level eight. The only way you'll know which chute to aim for is by looking for the hen that gives a little jump. That's the one that just laid the "golden" egg.

SNOOPY AND THE RED BARON 🕹🕹🕹

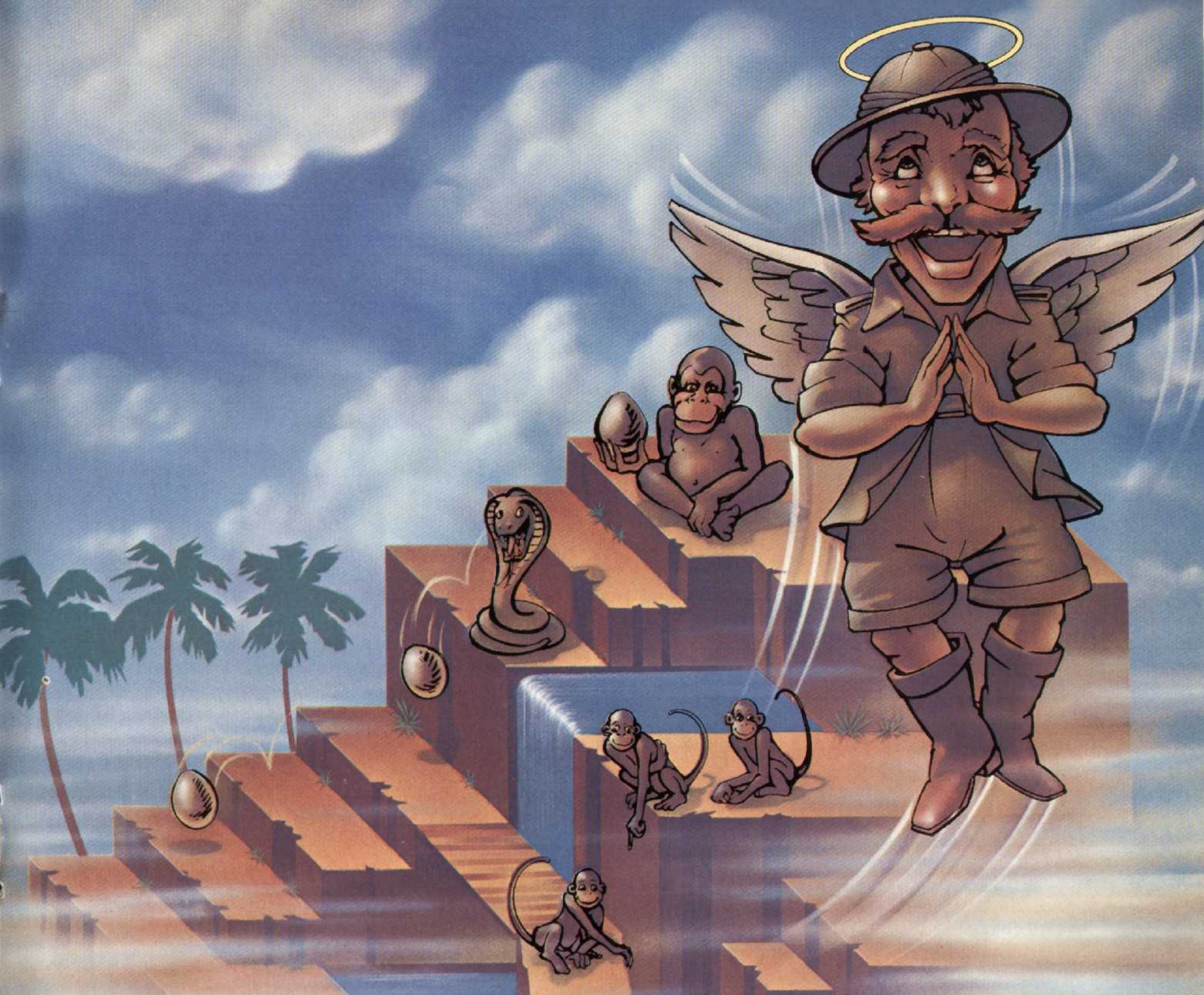
Atari/Atari VCS

By Mark Trost

From the opening strains of the Snoopy theme (heard on virtually every *Peanuts* TV special) to the final victory melody (which has a very French flavor), *Snoopy and the Red Baron*, while designed for a young audience, is still a treat for more mature game fans, particularly genteel souls just getting into video game sport.

As with many recent Atari cartridges, the company has lavished a great deal of care in translating the four-color comic strip beagle to animated video game air ace. Atop his high-flying Sopwith Camel doghouse, Snoopy comes to life with a determined grin on his face, red scarf dancing in the wind. In the air, Snoopy engages in a hot and heavy battle with the infamous Red Baron, represented by a constant flow of Fokker Tri-Plane silhouettes. The Baron himself remains unseen (just as he does in the comic strip).

Played on a no-nonsense scrolling screen consisting of



When you play Congo Bongo you'll die laughing.

FOR USE WITH ALL ATARI VIDEO COMPUTER SYSTEMS
Congo Bongo
SEGA

Made for:
Atari® 2600™
Atari® 5200™
Atari® Home Computers,
Commodore 64™
and VIC-20,™ Texas Instruments 99/4A™
Intellivision®

A funny thing happens when you play Congo Bongo, the new home game from Sega. In fact, a lot of funny things happen.

You have to get to Congo, the mighty ape, before the jungle beasts get to you. Dodge falling coconuts as you scale Monkey Mountain. Shake the monkey from your back and chase Congo onto the lagoon screen. Then cross the water on the backs of hippos, lily pads and hunter-eating fish. And do it all before Congo makes a monkey out of you.

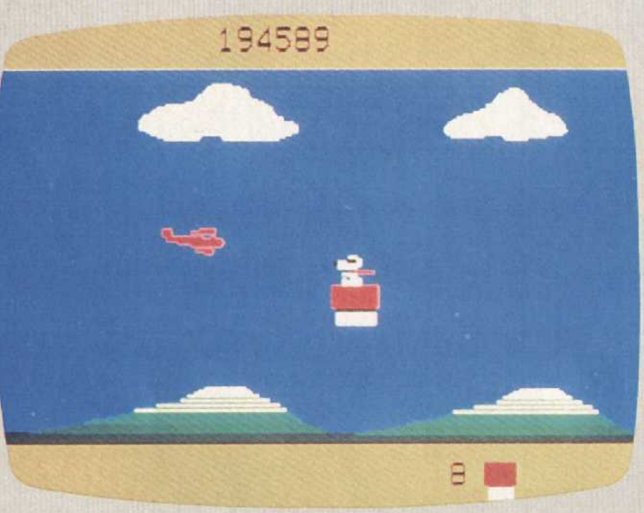
But watch your step – one slip and it's off to hunter heaven.

Congo Bongo. Straight from the arcade and into your home.

It's more fun than a barrel of, well, monkeys.

SEGA®
The Arcade Winners.

© 1983 SEGA Enterprises, Inc. SEGA is a registered trademark of Sega Enterprises, Inc. Congo Bongo is a trademark of Sega Enterprises, Inc. Atari 2600 and 5200 are trademarks of Atari, Inc. Commodore 64 and VIC-20 are trademarks of Commodore Electronics, Ltd. Texas Instruments 99/4A is a trademark of Texas Instruments, Inc. Intellivision is a trademark of Mattel, Inc.



clouds above, barren landscape below and miles of blue sky, Snoopy fights the Baron in *Defender*-like fashion, attempting to shoot down the evil ace while also picking up floating beer steins, bones and hamburgers. Players have four lives in which to get the Red Baron before he gets Snoopy. It takes eight hits (each worth 10 points) for Snoopy to down one of the Baron's planes, and, since all is almost fair in war, the Baron must also hit Snoopy's doghouse eight times (each hit registered by a bullet hole on the doghouse) to ground the valiant dog. A victory theme rings out after Snoopy has destroyed anywhere from three to five Barons, depending on the game variation. An additional 100 points are added for each downed plane. Snoopy may not win the war, but he can win a few battles.

True air-action aficionados will find Snoopy's antics mild compared to Coleco's *Time Pilot* or *Looping*. But, the fine treatment of Snoopy and his long-time adversary certainly adds to the fun and playability, making a game that would otherwise be strictly kid stuff into one that even those who eat and sleep VCS cartridges can enjoy.

Always keep Snoopy close to the ground, where the Baron can't fly. When the Baron reduces his altitude, quickly come up from behind and blast him out of the sky.

PIGS IN SPACE

Atari/Atari VCS

By Mark Trost

Talk about making a silk cartridge out of a sow's ear! Atari and Jim Henson have pooled their not inconsiderable talents to come up with a VCS cartridge that not only lampoons some of the most familiar space scenarios by using the famed *Muppet Show* characters, but actually offers a top-notch challenge to novices and experts alike.

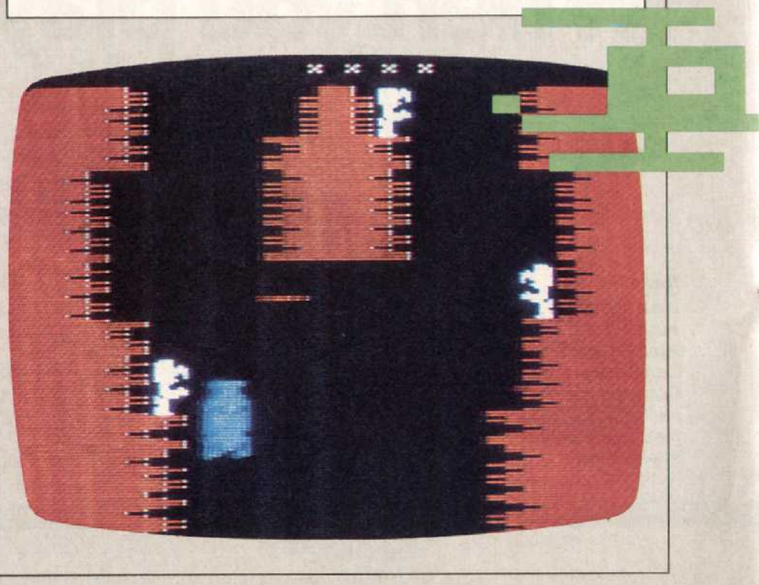
A genuine home game original, *Pigs in Space* offers three entirely different games. The initial parody features Captain Link from the *Muppet Show*'s "Pigs In Space" sketch in a *Space Invaders* story line. Armed with a trigger finger of hidden potency, Link attempts to shoot down row after row of advancing chickens before their deadly eggs turn him into an Oven-Stuffer Roaster. Link has five lives in which to do away with the foul fowl (earning him 10 to 100 points each), and then dispatch a Gonzo-faced UFO circling the screen.

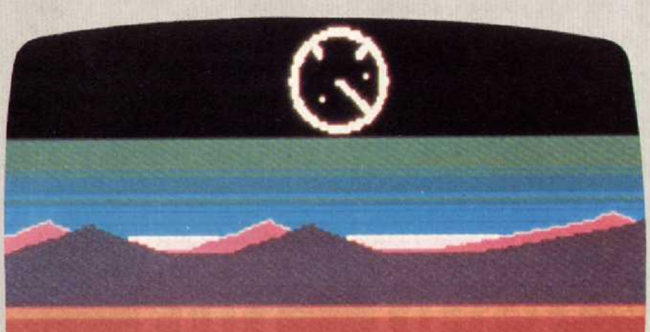
After mastering the *Invaders* take-off, it's on to selection two, which I've named *Piggy Kong*. In this one, Miss Piggy attempts to reach the top of the screen while dodging spaghetti strings and karate-chop meatballs. Here's one damsel in distress that doesn't need the help of some mustachioed lover.

Finally, there's the very *Vanguard*-ish variation starring Dr. Strangepork (a minor *Muppet Show* character elevated to video game star status due to the lack of other hams available). As the weird doctor flies through a cavern, he must do away with menacing Gonzoids using a boomerang-like weapon called the Boomeray. Again, a funny challenge.

The only complaint I have with the games, specifically one and three, is their use of the hapless Gonzo as the enemy. I kind of like the purple whatever-he-is, and would have preferred shooting at Fozzie Bear. He at least *deserves* some abuse for all the terrible gags he's dished out over the years.

To make sure Link doesn't turn chicken always stay one row ahead of the egg-laying hen and knock the rest off as they fly by.





BATTLEZONE 🕹🕹🕹

Atari/Atari VCS

By William Michael Brown

Any arcade adaptation for the VCS comes to bat with one strike already against it—lack of similarity to its coin-op ancestor. The comparison is inevitable, almost always negative, and usually not overstressed by reviewers—after all, how can anybody reproduce the full graphic splendor of a coin-op in the limited confines of a VCS cartridge?

But *Battlezone* has it even tougher, for everything about it—graphics, sounds, gameplay and overall design—invites comparison with the only other first-person VCS tank battle around, Activision's *Robot Tank*. And on this very fast track, VCS *Battlezone* comes in a very distant third.

Fans of the coin-op will probably be the most disappointed by *Battlezone*. True, the 360-degree radar screen is here, along with the enemy tanks and the defenseless, high-bonus saucers. The zig-zagging guided missiles are also present in spirit, embodied here as low-flying aircraft that loose deadly accurate missiles if they aren't blown away quickly enough. You can also hear the shots of off-screen enemy tanks, and see their shells whipping past when they miss. There is even a good approximation of the coin-op's light-up gunsight to help you zero in on your targets.

But everything else is gone: the mysterious midnight vector graphics (let's face it—how could they have given us vector graphics on the VCS?), the rock-spouting volcanoes in the distance, the cold moon that looks down upon your plight, and—most important of all—the blocky pillars and stones that turned the coin-op's landscape into an obstacle course and, willy-nilly, aborted your best moves or provided instant cover from enemy fire.

There are other problems. Because the ground colors don't change radically as you move, the 3-D illusion is marginal at best. The enemy tanks' turrets don't spin smoothly—instead, they jerk from position to position, making it impossible to judge how much time you have to sneak up on them. Atari's designers have tried to heighten the challenge a little by making almost all (instead of most) of the enemy tanks materialize behind you at first, but all this does is limit gameplay tactics to constant spinning movements, instead of the forward-and-back, turn-and-dodge strategy you could exploit in the coin-op.

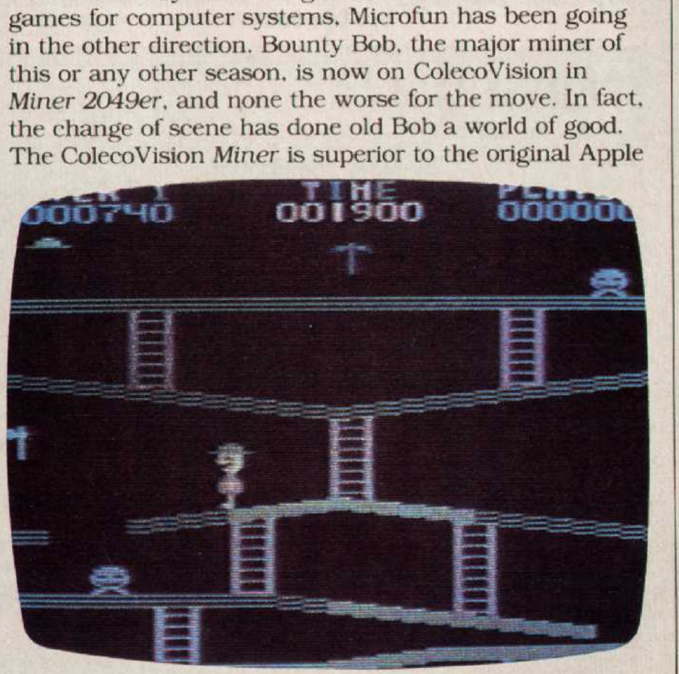
With all the coin-op subtleties and challenge stripped away, what you end up with is a 3-D search-and-destroy mission, period. And that's exactly what *Robot Tank* does just as well—while adding the complexities of changing weather, day/night variations, and a partial-damage feature that further complicates quick movement, accurate fire and your ability to spot the enemy. Much as I still love coin-op *Battlezone*—I still look for the machines at every new arcade I hit—and even though *Robot Tank* is an original, I'd have to say that *Robot Tank* is a better VCS adaptation of *Battlezone* than *Battlezone* is.

MINER 2049er 🕹🕹🕹🕹

Microfun/ColecoVision

By George Kopp

While Atari, Activision, Imagic and Parker Brothers have been busy translating their VCS and Intellivision games for computer systems, Microfun has been going in the other direction. Bounty Bob, the major miner of this or any other season, is now on ColecoVision in *Miner 2049er*, and none the worse for the move. In fact, the change of scene has done old Bob a world of good. The ColecoVision *Miner* is superior to the original Apple



version in graphics, gameplay, sound and the number of mad, mad screens—eleven as opposed to the Apple's ten.

Once again Bob is back battling mutants down the mine. Once again he must contend with moving platforms, slides, elevators and pools of radioactive sludge. Once again the indomitable BB must consume quantities of TNT and blow himself out of a cannon to make the dreaded level ten safe for the descendants of the United Mineworkers Union. But this time the action is faster, especially in the early levels. There's almost no room for error or Bob dies an ignominious death at the hands of the clock.

To operate the elevators you have to use the keypad on your Coleco joystick—no substitutions. For some strange reason, though, the Coleco controller works surprisingly well on this game so it's not too much of a hardship. There's only one difficulty level and you still don't have the option of starting at any level—get greased and it's back to level one. You start with three Bobs and get a free one at 10,000, 30,000 and 50,000 points.

The struggle to get to the eleventh level is definitely worth it. The floating platforms here give the game all the grace and tension of a trapeze act in the Big Top. Timing is essential as Bob glides through the hypogene expanse, wending his gongoristic way back to level one, and you could look it up.

Don't jump up on a piston that's going down. If it gets below your starting point by the time you land, bye-bye Bob.

SPRINGER

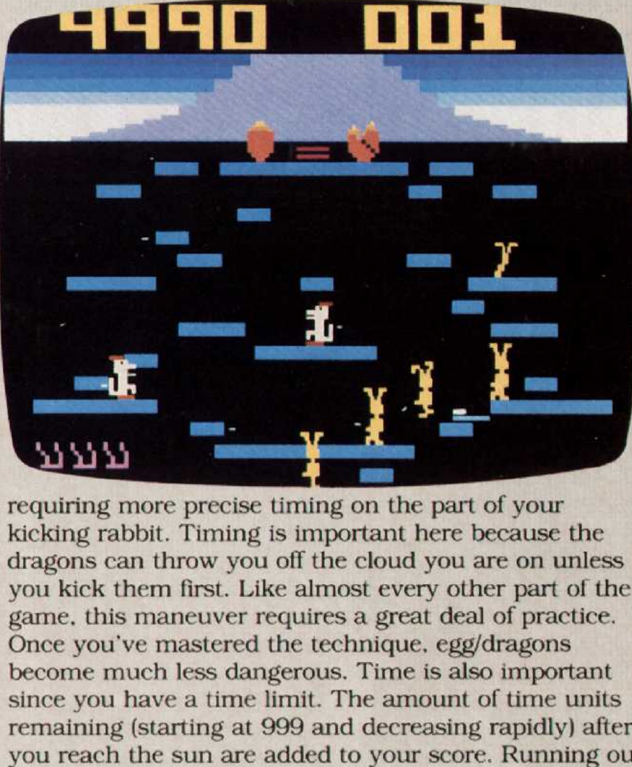
Tigervision/Atari VCS

By Mike Sheinbaum

One of these days, a software company is going to release a video game cartridge which offers a cute format without a cute theme. Until that day comes, VCS owners may have to settle for the likes of *Springer*, which, unfortunately, loses its initial appeal after very little playing time and has a ridiculous storyline.

Get ready for this: You're a rabbit that can do some rather amazing stunts. Aside from the run-of-the-mill hopping and jumping that you are known for, you have the ability to leap on top of clouds, which are scattered across the sky and kick dragons into oblivion. Not bad so far. Besides that, you can collect all sorts of objects that come your way ranging from toothbrushes to teapots to coffee mugs. After you collect all of the objects, you then try to leap into the sun. Once you have reached the sun, your rabbit does a little dance and you can advance to the next level (there are three in all) which is, of course, somewhat more difficult.

On level one, there are scattered clouds, bonus objects (a toothbrush and a carrot), and four eggs that can cause your bunny's doom. Although the eggs are harmless at first, they grow into larger varieties that are deadly to the touch. The only way to rid yourself of the larger eggs, and pick up 60 points, is to kick them. If this is not done fast enough, they turn into dragons. The dragons move back and forth on their clouds requiring more precise timing on the part of your kicking rabbit. Timing is important here because the dragons can throw you off the cloud you are on unless you kick them first. Like almost every other part of the game, this maneuver requires a great deal of practice. Once you've mastered the technique, egg/dragons become much less dangerous. Time is also important since you have a time limit. The amount of time units remaining (starting at 999 and decreasing rapidly) after you reach the sun are added to your score. Running out of time should not concern you since the player either completes the board or loses all three lives before time runs out. What causes your rabbit the most trouble are the clouds themselves. Some of the positions they assume require you to make nearly impossible leaps.



All in all, *Springer* is acceptable once you overlook the storyline and confused graphics. The background scenery, in fact, is very impressive. But unless you have excellent timing combined with a lot of patience, *Springer* may not be the game for you. On the other hand, if you're willing to spend the time and money, it may be a welcome addition to your VCS library.

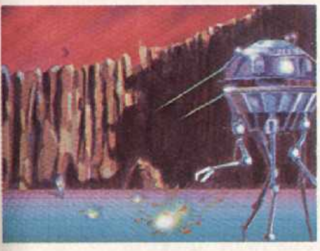
It is not necessary to destroy all of the eggs on the first three boards. On level one, go all the way to the right, collect the bonus objects and hop on the moving cloud. With practice, you should score about 920 points.

THE GAMES TO BEAT!

ALA VIDEO

Antimatter

For use on
COMMODORE VIC-20™ UNEXPANDED



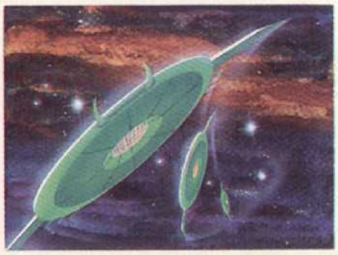
HARDWARE NEEDED: DATACASSETTE

VIC 20™ IS A REGISTERED TRADEMARK OF COMMODORE, INC.

ALA VIDEO

BLITZKRIEG

For use on TRS- MODEL I & III



REQUIREMENTS: DISK DRIVE
AND TRS 80 DOS

TRS™80 IS A REGISTERED TRADEMARK OF THE TANDY CORPORATION

ALA VIDEO

Laser Launches

For use on
COMMODORE VIC 20™

HARDWARE REQUIREMENTS –
COMMODORE DATACASSETTE, JOYSTICK

VIC 20™ IS A REGISTERED TRADEMARK OF COMMODORE, INC.

ALA VIDEO

Firestorm

For use on
COMMODORE 64™ COMPUTER

HARDWARE REQUIREMENTS –
COMMODORE 151 DISKETTE DRIVE

COMMODORE 64™ IS A REGISTERED TRADEMARK OF COMMODORE, INC.

FROM ALA VIDEO.

**AVAILABLE AT ALL VIDEO OUTLETS OR
CONTACT YOUR ALA DISTRIBUTOR.**

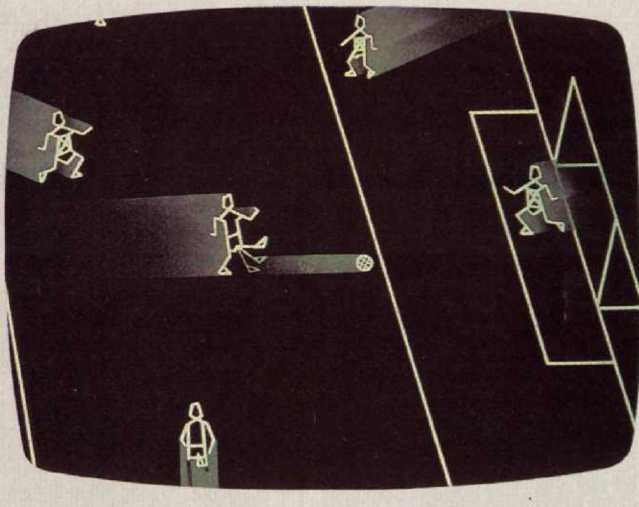
*Manufactured and distributed Worldwide by ALA RECORDS,
4218 West Jefferson Boulevard, Los Angeles, California 90016*

HEADS UP

GCE/Vectrex

By Noel Steere

At last, another sports cartridge for the Vectrex! Given GCE's record for ignoring the needs of sports fans (they've released only a single football cart up until now), *Heads Up* is both a welcome addition to the Vectrex library and an obvious indication that the company really wants to make up for past negligence. Unfortunately, this attempt at a soccer game may also be an indication of something else: GCE hasn't released a lot of sports games so far because they have some trouble doing them right.



True, *Heads Up* does have some strong points, very efficient joystick/panel control being one of them. You can use the joystick to control both the ball carrier (on offense) and whoever you desire on defense, and pretty much the same buttons are used to both pass or shoot on offense as are used to select who you'll control on defense. The switchover is made automatically as soon as the ball changes hands. This smart design (very much like the kind of setup you get with computer sports games), along with a dot that appears over the head of whoever you're controlling, means you can maintain close control of your team with a great deal of speed and a minimum of confusion and button-fiddling.

Another strong point is the graphics. Along with well-drawn scrolling court, goals and field markers, GCE has taken the usual Vectrex stick figures and made them 3-D by shrinking or enlarging them whenever they move away from or toward you. It isn't real 3-D, of course (it sometimes looks like that weird ancient Chinese perspective where there's no real vanishing point), but it does enhance the look of the game without making it too hard to pass or determine the relative locations of opposing players.

But the most critical feature of a good game-machine sports cartridge—good two-player *and* one-player options—hasn't been achieved here. While the two-player game is fine and interesting, the computer opponent in the one-player game is a total stumblebum. I'm at a loss to understand why (maybe it has something to do with the complex way the non-human-controlled men will automatically follow and guard your ball carrier), but the computer player is so stupid that scores of 10-0 in your favor are quite common when you play against it. In fact, if you play the two-player game by yourself (with the opposing team just standing there), it's almost exactly like playing the computer.

That's a big problem—you can't always find a human opponent to play with you. So unless you're a Siamese twin, *Heads Up* gets thumbs down.

The two-player game has a glitch too: if you can get behind the goalie and shoot, he won't be able to stop you from scoring.

SUPER ACTION BASEBALL

Coleco/ColecoVision

By George Kopp

Back in the old days when the only video games were those with emcees with four rows of teeth, you could send away boxtops, bubblegum wrappers or Ovaltine labels to get a Captain Blasto Space Ranger's Ring or some other nifty souvenir. This amazing offer (for a limited time only) would enable the wearer to save Earth through a series of ingenious devices imbedded in it—things like a compass, or a secret map compartment, or the telephone number of Captain Blasto's agent. The Coleco Super Action Controller, with full keypad plus joystick plus four trigger buttons plus Action Roller is the computer age counterpart to Blasto's ring, although unlike the ring it allows you to play a pretty mean game of video baseball.

All sorts of fancy devices have been tried in the hopes of making video baseball more realistic. And we've got to admit that things have improved since that inadequate Atari *Home Run* cart of long ago. Mattel really spruced the game up with their baseball cart and then Milton Bradley introduced the first voice-controlled baseball game for the Texas Instruments computer. But the Super Action controllers and the accompanying cart take the game a step further.

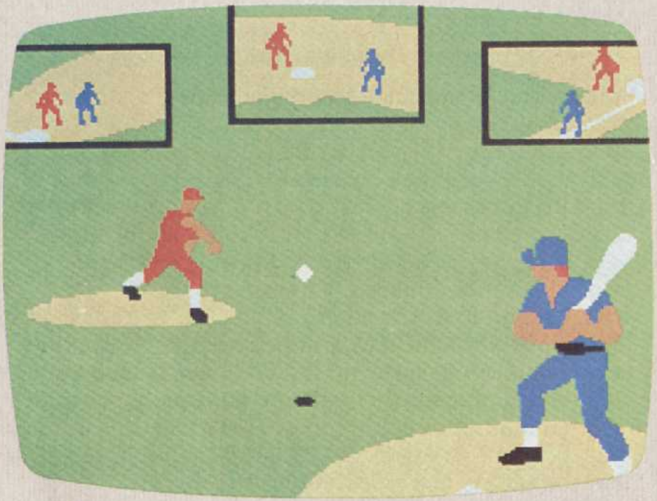
In fact, *Super Action Baseball* is the best playing computer baseball game around. No more of those missed double plays because the ball you meant for your first baseman ended up in center field. Your fielders throw bullets every time. As for the runners, you can't sit back and let the computer do the work for you. To get your men to move you've got to roll the

little roller like crazy.

Super Action Baseball gives you two screens, one for batting (a first base dugout perspective with the three bases shown in insets) and the other a full view of the field. After the hitter connects, the scene shifts to the full field for the action. Although it's good, it could have been better. Fly balls are hard to judge and getting the runners to move independently is almost too tough to attempt. But the biggest flaw in the game is that you cannot play a full game against the computer. There are batting and fielding practice modes, but both of those get boring after not very long. To have a good game you need a human opponent, and that's not always the easiest thing to find.

Still, if you can get up a game you're in for a pretty good time. The graphics are excellent and the sound includes whistles from the stands and "Charge!" calls from the organ. The umpire calls balls and strikes with style. As for the controllers, they pass their first test with flying colors.

Unlike other baseball games, the advantage in a steal situation is with the fielding team. Don't let your runners take too much of a lead.



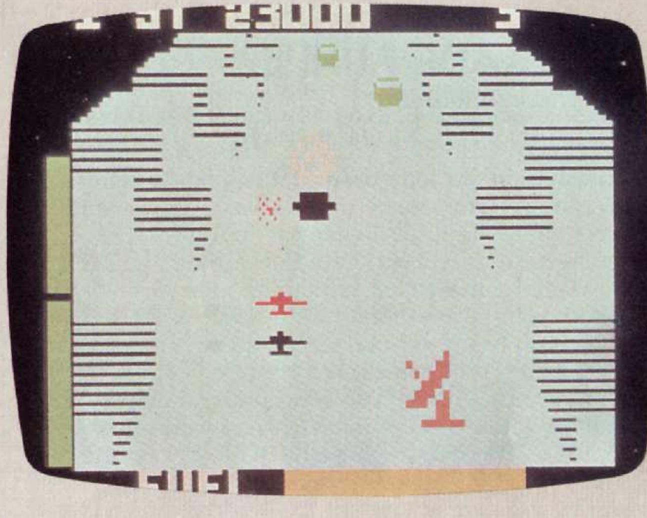
ZAXXON

Coleco/Intellivision

By Marc Berman

You've got to be kidding! If this is *Zaxxon* then I'm the queen of Venus! If you love *Zaxxon* like I do, spare yourself the heartbreak of playing this version. It's less like the original than, say, *Pac-Man* is like *Mousetrap*—or *Galaga* is like *Space Invaders*.

For starters, the skewered 3-D angle is gone. Instead you follow your ship straight into the fray a la *Buck Rogers*. But your ship isn't the sleek shuttle craft you remember from Sega, Datasoft or ColecoVision translations; here it looks more like a redwood seesaw. Turrets and fuel tanks are reduced to flat, clumsy blobs. Inexplicably the gun turrets dance on two legs.



The first asteroid is easy if you can get the sluggish controllers to work with any precision. There are far fewer targets than "the real" *Zaxxon*, however some of them hover over the surface. Unfortunately (and in defiance of physics) they don't cast shadows like your fighter does. Targets don't advance with any kind of fluidity either; they take jerky giant steps forward as you approach them.

In deep space forget about the altimeter and just fire away. The enemy ships are easy to hit and fly on the same two-dimensional plane as your fighter.

The second asteroid is not much different from the first, as mobots appear on both. No fancy dancing here, though; the mobots move in individual and random patterns. The Zaxxon robot looks like Mr. Machine and is hard to kill. It takes three to six hits to destroy him, depending on which skill level you choose. Harder levels also include the force field.

The jet noises are still there but they sound a little rheumy. The pilot's controls still simulate the directions of a real airplane joystick; however, something vital is lost by using the disk instead of a stick. It's sort of like driving a car with a trackball.

As a completely new game, this cart is fair. As an adaptation of *Zaxxon*, it misses by light years. Calling it *Zaxxon* is misleading.

To destroy Zaxxon you have to hit the missile before it leaves his body. Start at the bottom of the screen and move up slightly to the level of the missile. Then track Zaxxon from side to side.

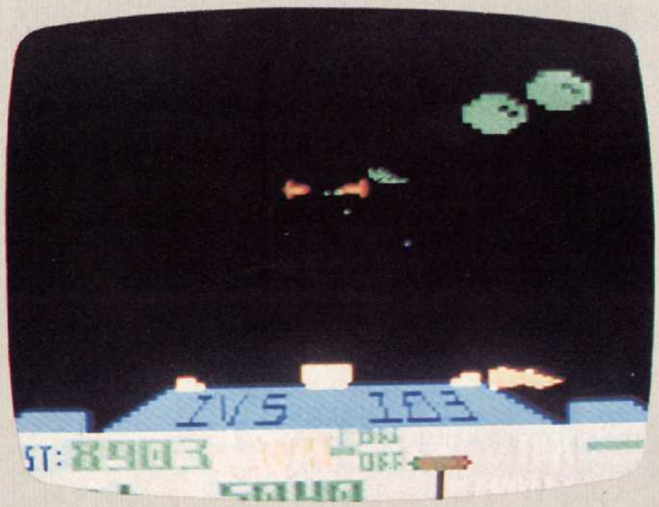
BLOCKADE RUNNER 1111

Interphase/Intellivision

By Charles Ardai

Intellivision has long been condemned for being a one-track system: its sports games are, almost without exception, the best on the market, but its action games—with the exception of *Burgertime* and *Lock N Chase*—have always left something to be desired. One big sore point: even though it's a staple of the industry, Intellivision has never had a high quality, first-person space game. And then came *Blockade Runner*.

In *Blockade Runner* you control four transport starships whose vital mission is to transport needed supplies to Earth through hostile territory. During the game you get a view of the surroundings through the main viewscreen of your ship. Below the screen is a dashboard that keeps track of such things as speed, fuel level and engine temperature. In the center of the viewscreen is a set of crosshairs to which all of your torpedoes travel when fired. Anything that is in the crosshairs when a missile is fired will be tracked down and hit, unless it goes off the screen. To make up for the ease with which you can hit enemies, you are given a very limited number of missiles.



The disk is used to steer your ship (the crosshairs never stray from their position in the center of the screen), and all other functions are controlled by the side buttons. The steering is very smooth, and for once the controls don't cause any major problems.

During your flight you meet up with a number of very diverse adversaries like asteroids, deadly plasma rays, explosive space mines and the alien ships that set all this up for you in the first place.

Blockade Runner's first-person visuals are superb. While it lacks a starry backdrop, all of your enemies are well-drawn, and the feeling of movement is very realistic. The detail is magnificent, from the rivets around the viewscreen to the serial number on the bulkhead.

But what really sets *Blockade Runner* apart from other first-person contests—even on other systems—is the wonderful blend of action and strategy. Strategy is smoothly woven into the storyline, and you have a lot more to decide than which ship to blow up first. Should you attack the aliens or go for the ice crystals? Should you conserve fuel, or should you speed up in order to reach Earth faster?

Blockade Runner is truly marvelous. The programmer has overcome the inherent difficulties in the Intellivision controllers, and has used all of the machine's capabilities to the fullest. Intellivision owners, rejoice! At last—a space game you can be proud of.

Go for distance rather than points; if you reach Earth, you get a 10,000-point bonus.

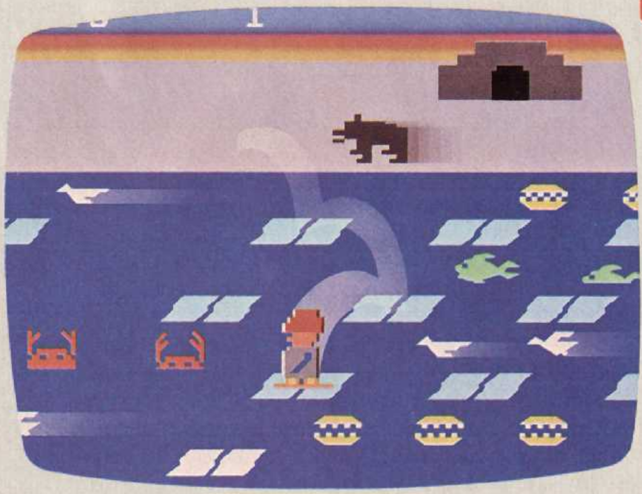
FROSTBITE 111

Activision/Atari VCS

By Randi Hacker

Someone in the office pointed out that *Frostbite* didn't necessarily have to be set at the North Pole to be successful. Sure the Aurora Borealis—rendered with Activision's inimitable finesse—provides a colorfully dramatic backdrop against which to play but really, it could have been set anywhere. It could, for example, have been called *Sunstroke* and taken place in some tropical paradise. Instead of freezing to death, you would expire from hypothermia. Instead of ice floes to jump on, you might have jumped from log to log. Instead of a fierce polar bear, it could have been a bull elephant. And instead of building an igloo, you could have built a hut of palm fronds. Don't take this to mean that the game is vague. Au contraire. What it means is that the setting is incidental to the gameplay.

What Activision has done here is to borrow familiar ideas from two previous hit games, namely *Q*Bert* and *Frogger*. In *Frostbite*, it is the essence of the jump-across-the-river-change-the-colors games that counts with a few little theme twists that give it a flavor of its own. The point is to make Frostbite Bailey jump from one row of ice floes to another as they move in opposite directions down a raging Arctic river. Each jump changes the color of the floe chips and adds a block to your igloo. You've got to complete the igloo before the temperature (which starts at a torrid 45 degrees) drops to zero and you freeze to death. Rapidly plummeting temperatures are the least of your worries. There are



also snow geese which fly into you and push you off the relative safety of the ice, killer crabs and clams and, as mentioned before, a polar bear which does not want you to ever go home.The fish, however, are your friends.

The number of ice floes varies from screen to screen and, for the most part, you can only jump forward, backward or diagonally. There is very limited lateral movement and only in screens where the ice is more plentiful.

Activision has taken a hackneyed theme and given it new life by adding new strategy problems to it. You can't simply jump across the river and rest. You've often got to jump tirelesssly from floe to floe before you can reach dry land safely again. And sitting on the ice floes to wait is no picnic due to the birds, etc. The patrolling bear means no rest for the weary either. Regaining the shore becomes a matter of timing as well. One false jump and instead of going home for dinner, you'll be going home *as* dinner.

If you have a finished igloo and the bear is to your left, get up to the shore fast. This is the only way you'll be able to outrun the bear.

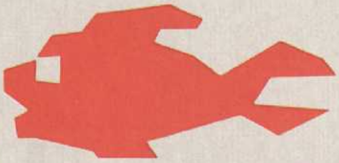
POLAR RESCUE

GCE/Vectrex

By Charles Ardai

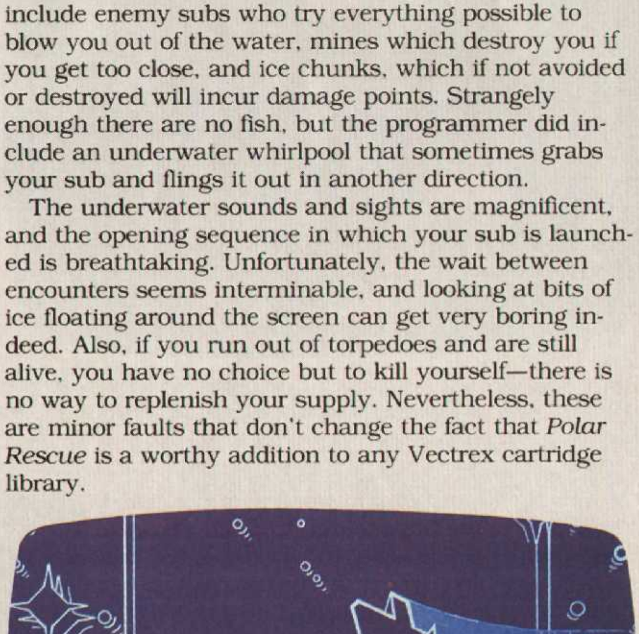
Since the video revolution, many video games have been made which simulate a variety of exciting experiences. However, there has never been a home game that fulfills the dreams of those who have wanted to pilot a submarine beneath the polar ice caps and rescue the survivors of a shipwreck. Until now, that is.

Games for the Vectrex, with a few notable exceptions, have always maintained a uniformly high standard of quality. This standard has been upheld in one of GCE's newest releases, *Polar Rescue*. As you may have guessed, in *Polar Rescue* you control a submarine whose mission is to seek out and rescue the remaining survivors of a recent shipwreck. You control your lateral movement via the joystick, while the first three buttons control forward/reverse thrust and firing of torpedoes. Button four pauses all the action on the screen, until it is pressed again.



You see a section of the ocean through the main viewscreen, which occupies the upper two-thirds of the screen. The rest of the screen holds gauges which keep track of such things as oxygen level (if you run out you lose a sub), number of torpedoes remaining, damage points and speed. In the lower center portion of the screen is a beautifully-drawn radar screen that monitors the inhabitants of the water all around your sub. These include enemy subs who try everything possible to blow you out of the water, mines which destroy you if you get too close, and ice chunks, which if not avoided or destroyed will incur damage points. Strangely enough there are no fish, but the programmer did include an underwater whirlpool that sometimes grabs your sub and flings it out in another direction.

The underwater sounds and sights are magnificent, and the opening sequence in which your sub is launched is breathtaking. Unfortunately, the wait between encounters seems interminable, and looking at bits of ice floating around the screen can get very boring indeed. Also, if you run out of torpedoes and are still alive, you have no choice but to kill yourself—there is no way to replenish your supply. Nevertheless, these are minor faults that don't change the fact that *Polar Rescue* is a worthy addition to any Vectrex cartridge library.



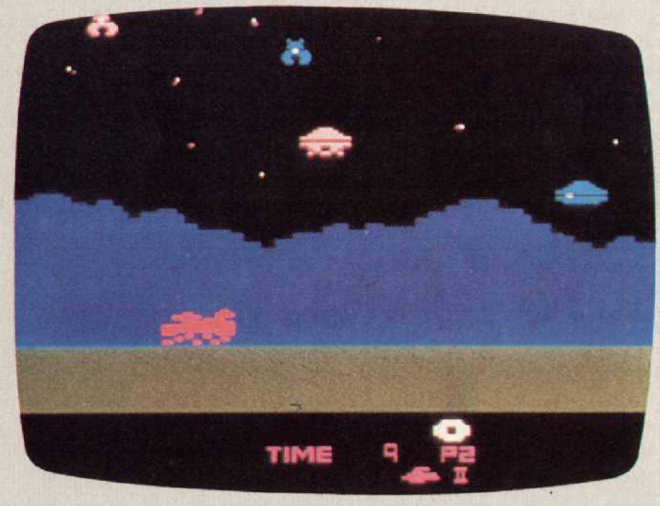
Never waste shots on ice chunks. They are easily avoided and don't yield many points when hit.

MOON PATROL

Atari/Atari VCS

By Gary Miller

Does the harried pace of driving games such as *Pole Position*, *Turbo* or *Enduro* make your head spin? Would you like to take a quiet ride for a change? Well, there's a quiet spot waiting for you on the moon. There isn't much traffic there. In fact, you're the only one in sight. You get your chance at piloting a moon buggy in *Moon Patrol*, a new Atari cartridge based on the Williams arcade favorite.



Your perspective is not from behind the wheel as in the aforementioned racing games. Rather, you're given a side view of the happenings at hand. You drive the moon patrol vehicle along the terrain of the lunar surface, watching over your domain. At times, you calmly traverse the countryside of the moon with not a care in the world. But then, things start to happen. First of all, a rock appears in front of you. It apparently is too large to drive over as if you try, your vehicle disintegrates and you find yourself back where you started from. Your lunar buggy is equipped with some very interesting defense mechanisms. You can flip your joystick up and jump over the unfriendly obstacle, or you can push your fire button and destroy the rock with one of your laser weapons. Each time you fire, bullets come out of both the front and the top of your vehicle. Not only what is in front of you, but also what might be above you, is eliminated.

Later on, you'll come upon a deep chasm which blocks your way. If you fall into the hole, that's it. Since craters can't be destroyed by firing at them, you must jump over them.

Then, as if these dodging, jumping and shooting problems on the surface weren't enough, there are spaceships. Reinforcements, perhaps? Maybe just some company for you on your lonely trek? Not on your life! The bombs they begin to drop on you demonstrate they are anything but friendly. You must destroy these with your fire button. Now you find out why the bullets not only go forward but upward as well. So with all the threats from space, as well as the obstacles here on the surface, this turns out to be not such a quiet ride after all.

Moon Patrol may not be the most original game ever created but it is one of the most challenging and addictive. Jump over one rock and you may land on another one. And just try getting by one of those places where a rock and crater lie side by side. You must destroy the rock and jump over the chasm at almost the same time and you still might end up landing on another rock. You never know in this game. You are given three buggies and a certain amount of time to complete each screen. If you're successful without using up all your buggies, then you're transported to another place on the lunar terrain where the hazards are different and tougher.

Atari has not quite captured the graphic detail of the coin-op but that doesn't matter much. The play's the thing here, and it is fun—close enough to the coin-op so as not to be too objectionable to fans of the arcade version and loads of fun and a challenge to all players. If you don't like music, Atari even lets you turn off the sound using the difficulty switches. That *really* makes you feel the loneliness of patrolling the moon in deep space.

When you come upon a new obstacle, try all possible combinations of firing and jumping. Some challenges may seem impossible, but there's a way of getting by anything in this game with enough practice.

BOING!

First Star/Atari VCS

By William Michael Brown

Finally—a *Q*Bert* clone with some soul. In fact, I almost hate to call *Boing!* a clone, since its differences from *Q*Bert* are almost as strong as its similarities. True, the game *does* feature a little guy who hops around a geometric array of cubes while being pursued by enemies. But along with plenty of wit and some very good VCS graphics, *Boing!* features play principles that make it much tougher to beat than *Q*Bert*.

Cast as a bubble stuck on an inclined playfield of 36 cubes, your job is to turn all the cubes "on" by hopping on them. There are only two enemies: the Bubble Eater, who resembles a sort of criminal Shmoo, and the Pin, which looks like just what you think it does. The

This Christmas, Atari and Commodore* owners will go out of their minds.

It'll take about 30 seconds.

Because once you boot a Datamost game on your Atari home computer, or your Commodore 64, you'll come face to screen with the most mind-blasting games ever.

And what better time to go out of your mind than Christmas?

Our Music Will Have You Hearing Things.

Going out of your mind never sounded so good.

Because now our games have music. You heard right. Music. Original Music. Throughout. And scored just for our newest releases. You'll go nuts over it.

Our Graphics Will Have You Seeing Things.

You and everybody else.

Because our games are so great-how great are they?-they're so great you'll want to play them again and again and again. And then your friends will go bonkers over them. And they'll want to play. And then your family will want to play. And then total strangers off the street will want to play and...

Mind-blowing arcade-quality action like this makes it one mad world, pal.

THE TAIL OF BETA LYRAE.™ Changes as you play. Unpredictable. Impossible to master. (No one has!)

We'll Torment You Right From The Start.

No time to settle down and get comfy.

The tension begins building the moment you boot the game.

Terrific screen titles tease you with the game's objective, scenario, characters.

And while you wait, hand twitching over the Joystick, you'll find out what planet you're on.

What the fuss is all about.

Why you're involved. And perhaps of singular importance to you personally, how to keep from being obliterated. So get ready to get the most out of your mind.

By getting the most out of ours.

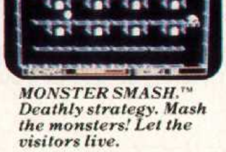
DATAMOST™ INC

The most out of our minds.™

Datamost, Inc., 8943 Fullbright Ave., Chatsworth, CA 91311, (213) 709-1202

Atari is a trademark of Atari Computer. *Commodore 64 is a trademark of Commodore Business Machines, Inc. TM Registered Trademark of Datamost.

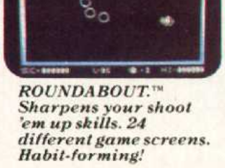
COSMIC TUNNELS.™ Four games in one. Four times the challenge! Incredible graphics.



MONSTER SMASH.™ Deathly strategy. Mash the monsters! Let the visitors live.

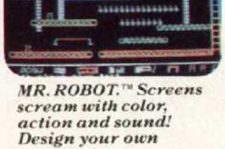
SCORE 000000
SHIPS
FUEL

NIGHTRAIDERS.™ Strafe a city under siege with 3D angled selective firing!

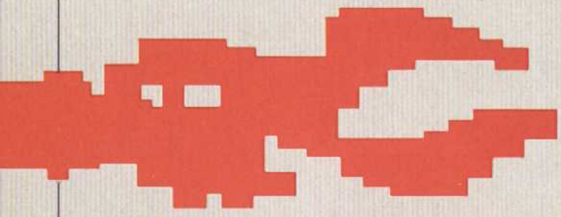


ROUNDABOUT.™ Sharpens your shoot 'em up skills. 24 different game screens. Habit-forming!

COHEN'S TOWERS.™ You're the mailboy in a big city skyscraper. Work your way to the top.

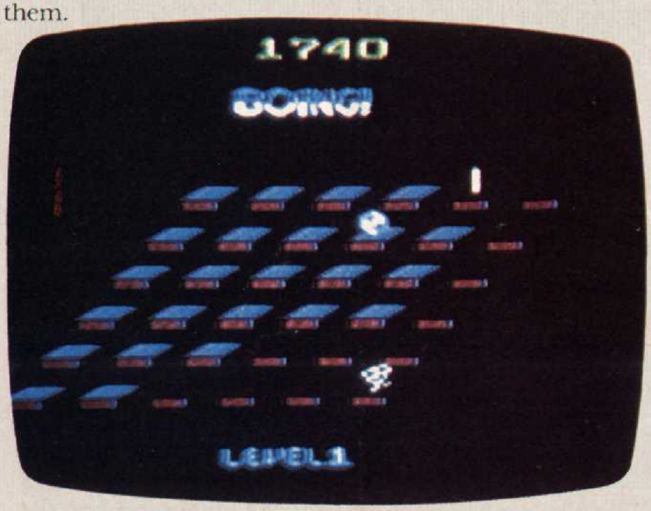


MR. ROBOT.™ Screens scream with color, action and sound! Design your own screens, too.



Bubble Eater starts out on the lower right-hand corner of the square playfield and follows you around constantly, trying to jump on you and take away one of your five lives. The Pin enters randomly at the top of any one of the six rows of cubes, and heads straight down, also trying to pop you. Once you turn the whole playfield on, you're transported instantly to the next of five waves of similar playfields; once you've finished all five waves, it's on to the next of six levels of play.

So, what are all the big differences? For one, there's no escape disk a la *Q*Bert.* You're trapped with the Bubble Eater on that little playfield, and thus forced to dodge constantly at the same time you're trying reach the cubes you haven't turned on yet. This dodging/working-the-cubes routine ends up making you play the Bubble as though he were Q*Bert with a permanent Coily problem—and it gets even hairier in the upper waves, where BE begins doing his Jesse Owens impression. As if that weren't tough enough, the upper play levels introduce complications we've all grown to know and loathe in *Q*Bert*: certain rows of cubes have to be turned on before you can turn on others, and turned-on cubes turn off the second time you jump on them.



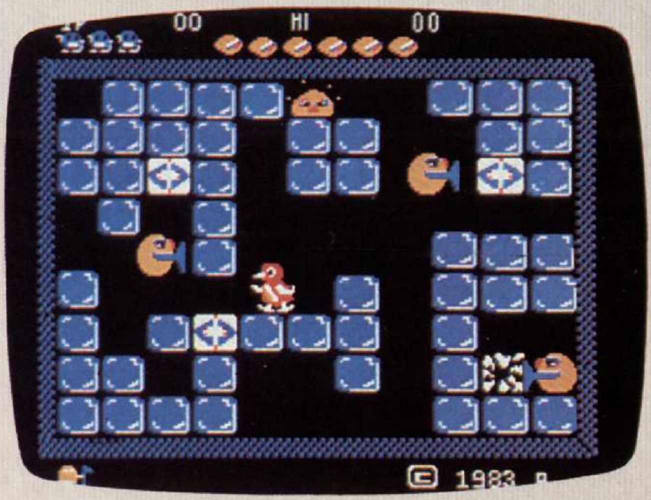
The Pin will also temporarily deflate BE, but beware you don't get popped yourself. All in all, *Boing!* lets you use the skills you learned in *Q*Bert* in a much more challenging environment.

PENGO

Atari/Atari 5200

By Phil Wiswell

If birds were really a penguin's enemies, crushing them between blocks of ice would hardly be a fitting means of defense for an animal that swims in his tuxedo. Still, that is the exact premise of *Pengo*, Atari's new coin-op-to-home translation featuring very nice graphics and sound effects. So why do I think I won't play *Pengo* after this review is written?



First, let me explain the game for those unfamiliar with the coin-op. You control a penguin that begins each turn center screen in a maze of ice blocks. A single fire button is used for two things: 1) you can break an ice block with your beak if there is a wall or another block directly on the other side, or 2) you can cause an ice block to slide horizontally or vertically until it hits a wall or another block. What you want to do is time it so that a sliding block catches one or more of your enemies, the birds, and crushes them.

Each wave is a new maze of ice blocks and remains on screen until you have killed all the birds. Only three birds at a time are in the maze, but eggs inside some of the ice blocks hatch to replace birds that are killed. The blocks containing eggs flash as each wave begins, so you can memorize their positions. And if you break a block that holds an egg, so much the better—you won't have to face it as an adult bird.

Both your penguin and the birds can break up ice blocks except those containing diamonds, and these indestructible blocks become your most important weapons. By far the most interesting aspect of *Pengo* is that you affect the shape of the mazes by pushing the blocks around, and you must use the maze walls themselves as ammunition. That is a nifty concept.

However, the 5200's controller was not made to facilitate movement in *Pengo*. It feels very slow because the joystick is less responsive than most, and you end up overrunning lots of blocks because the joystick is not self-centering. Given enough practice one can minimize this problem—only to find another. There is a time factor involved in clearing each board. Why?! The object is difficult enough without forcing the player to hurry.

There is a world of difference between this *Pengo* and the coin-op. You can't hear it and you can't see it, but you *can* feel it when you play.

Memorize the positions of the eggs, but break only those that do not take you out of your way.

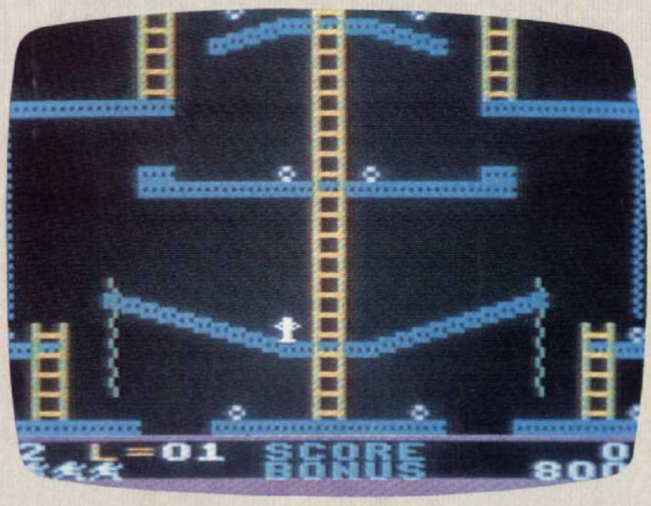
JUMPMAN JUNIOR

Epyx/Atari 400/800

By Jeremy Goldstein

For many years Epyx has been known for its great adventure games and now Epyx is breaking new ground with a series of arcade-type action games. One new release is *Jumpman Junior*, a game fashioned after the ever-popular arcade hit *Donkey Kong*. While there have been many *DK* take-offs, *Jumpman Junior* is one of the few that succeeds where others fail.

You are given the task of destroying all the bombs that have been planted by Alienators on the twelve levels of your command substation. Yes, you read it right, that's 12 levels! (That's the cartridge. The disk has 30 levels!) And what's even more awesome is that, after you've gotten through the 12 levels (if you ever get that far), the game starts giving you random screens made up of all the things you went through before. This is a far cry from games that start again with the first screen once you've taken them to the limit. To destroy the bombs you need only touch them. The screens always consist of stairs and, most of the time, ropes which you ascend and descend to get to the different floors where the bombs are scattered about. It is best to use these as often as possible since they will help you to clear the screen in less time, which gives you more bonus points when you finish the level. Once you clear all the bombs, you are transported to the next—and harder—screen.



While most obstacles change with every level one remains the same: the enemy bullets. They are fired from the sides of the screen and emerge either very fast or very slowly. The slow ones will wait until they are in line with you and then will suddenly change direction and fire straight at you. These are fairly easy to avoid from far away but from close range they can be deadly.

The sixth level stands out from all the rest. In it, there are many pitfalls, but they only appear after you destroy the bombs. In some cases you will destroy the bomb and then see the floor suddenly drop out from under you sending you to a horrible death. While at times destroying a bomb will only lead to your destruction, sometimes it will cause new ladders or pieces of floor to appear. These additions will allow you to reach bombs that were otherwise unattainable. It is a level that you will never complete your first try and that may stop you dead in your tracks just when you thought you were going great guns.

The sixth level is a perfect illustration of what *Jumpman Junior* is all about. It isn't just a game where all you do is run around different screens, gobbling up or destroying something. It requires you to think, to plan ahead and to be patient. With every level you have to think of how best to do something, how to make the most of certain obstacles and how to solve problems that may appear unsolvable. With all the years of adventure games behind them, Epyx has put all their experience together to come up with one heck of a game.

Try to stay away or get quickly away from the edge and corners of the screen since you will have very little time to avoid any bullet that comes straight at you from the side of the screen.

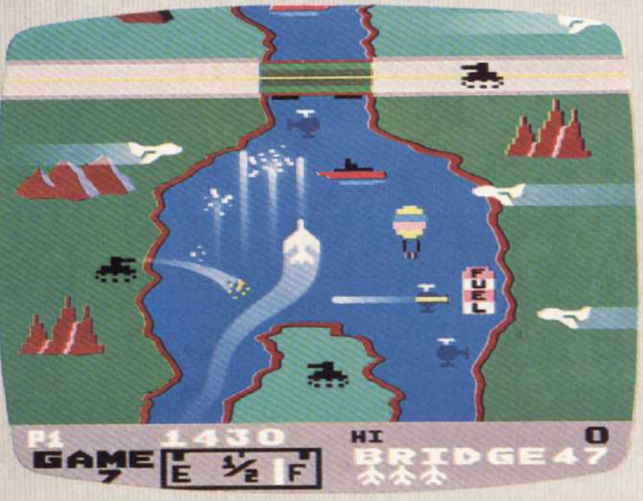
RIVER RAID

Activision/Atari 400/800/1200

By Robert Alonso

Comparing the new *River Raid* for Atari home computers to its VCS predecessor is like comparing a 1984 Corvette to the Ford Model T. The computer version is just plain faster, better looking and more of a delight to play. Perhaps the most dramatic and important change is the river's appearance. Instead of being composed of straight lines, the computer version has smooth curves and channels that make it resemble a real river, and there are more refined designs for the player's plane, the ships and the 'copters. Plus, the addition of moving tanks and rainbow-striped balloons make this game as much fun to watch as play.

River Raid makes you both a pilot and a gunner. As pilot you must maneuver your plane through ever more perilous river formations and make sure that you have enough fuel to make it to at least the next fuel stop. The river scrolls smoothly beneath your plane, creating a terrific illusion of movement. As the plane's gunner, you must attempt to shoot as many 'copters, ships, enemy aircraft, balloons, tanks and fuel strips as you



can. You must also keep in mind that some of the fuel strips are necessary to your survival so you should not be over eager and blow them all up.

Carol Shaw, the game's creator, calls *River Raid* "the river of no return." The reason for this name is that the game action never ends—each level (there are more than 50) is different and more difficult than the last. Presumably you can continue playing and reaching higher and higher levels forever. If you get skilled enough, you may begin the game at higher levels to avoid boredom.

River Raid on the VCS was a very challenging game, and it is even more so in this computer version. Unlike the 'copters in its VCs predecessor, some of the 'copters in this game shoot back at you. The tanks will also begin shooting at you at higher levels. These features combined with the superior play action make *River Raid* one of the most entertaining home computer games of the year.

Hold back on the joystick to go slower and shoot the tanks as they pass over the bridges. Doing so will get you many more points than if you just shoot down the bridges.

MOONDUST

Creative Software / Commodore 64

By Phil Wiswell

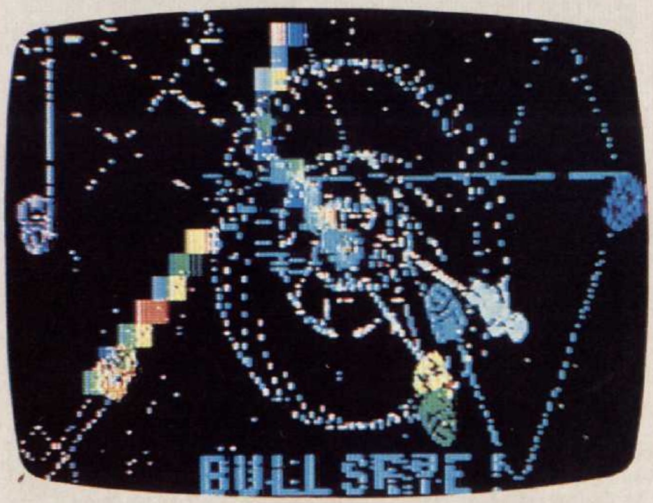
Moondust is an audio/visual treat that defies an accurate description. It is definitely one of the most spaced-out computer video games, and not to be trashed for being so. But more importantly, *Moondust* is an incredibly involving computer plaything, a piece of interactive art and music whose graphics and sounds are mesmerizing.

Seven objects will appear on the screen—a spacewalking man and six brightly colored ships—and the joystick controls *all* of them. The Spacewalker and ships are always in motion, and when you push to the left, they all go left. When one of them nears an edge of the screen, it automatically makes a graceful turn. What you end up with most of the time is seven things heading in seven directions, and you have to keep your eyes on all of them, especially the Spacewalker, because he can get knocked out if he runs into a ship.

In *Moondust* you can fly everybody around for as long as you like—there is no time pressure to add to the game's challenge—and the temptation to just watch and listen is difficult to overcome. Each of your seven objects leaves bright sparkling trails of moondust in its wake, and through careful manipulation of the joystick you can get them to perform a dazzling kind of space ballet. Meanwhile, every move you make is affecting the background music. (The 64 can easily be connected to a stereo amplifier, and you haven't lived until you've played *Moondust* wearing headphones). Pushing the joystick up raises or lowers the pitch: and pushing left or right changes the note or chord structure. So the music is never the same.

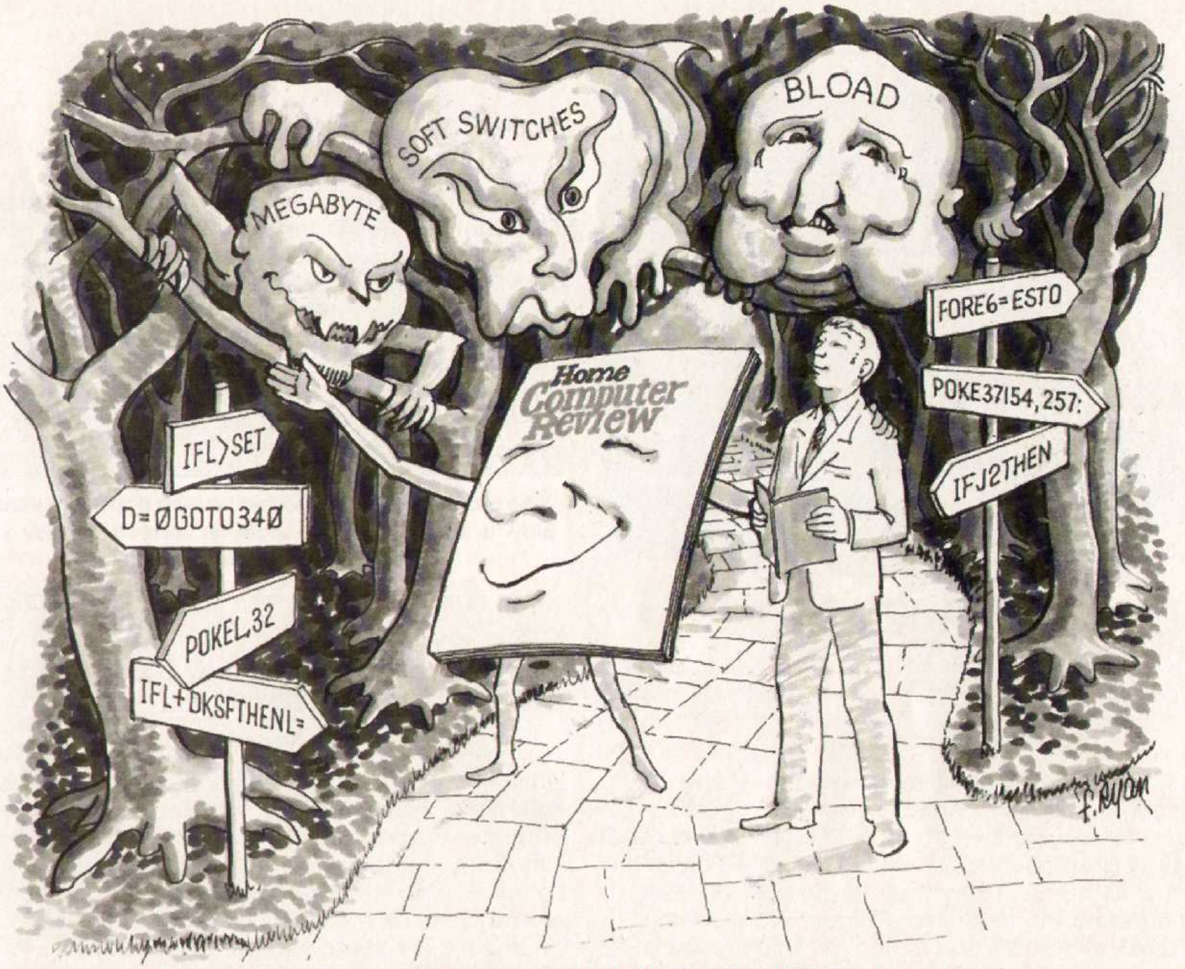
When you are ready, there *is* also a game here. The Spacewalker carries three seeds (colored rectangles), and one is dropped by pressing the action button. This seed can be drawn out into a stream of seeds by flying a ship over it, and these can be spread into further streams. The object is to direct a stream of seed squares into the dead center of the screen (a target appears when a seed is dropped). The farther the seed is sown from the center, the more potential points it is worth for a bullseye, which earns a bonus seed.

If it sounds like a confusing job to control seven different objects with enough precision to master this game's four main variations, you're on the right track. At first play you should relax and try not to concentrate too hard on the objective.



Enjoy your part in the show. And remember: your own ships are what kills the Spacewalker, making you your own enemy.

Come out of the woods... into the age of computer-ease!



New from the publishers of VIDEO REVIEW...Introducing

Home Computer Review

Reserve your Charter Year's Subscription now — *for only $11.97!*

Home Computer Review makes things easy! (Isn't that what computers are for?) No need to be an electronics whiz or a mad hacker to fathom our programs or play our games. No need for an engineering degree to dope out our buyer's guides to the latest computers and peripherals. No need for the patience of Job (and megabytes of RAM) to follow our software reviews and tutorials.

Home Computer Review speaks your language! You don't need to know BINARY from BASIC...a PEEK from a POKE...a BLOAD from a CLOAD...ASCII from ASCAP...or APPLESOFT from APPLESAUCE. Your mother tongue will do fine.

Home Computer Review makes computering fun! For everyone, including the beginner and the non-specialist. With its informative and entertaining articles on word-processing, games, graphics, data and record management, modems, voice-control, programming, even robots you can build yourself! — everything that's happening and about to happen in this exciting field.

So come out of the woods! Get a Charter Year's Subscription to Home Computer Review for only $11.97. This could be the beginning of a beautiful relationship.

CHARTER SUBSCRIPTION SAVINGS

Home Computer Review

☐ O.K. Start my subscription to Home Computer Review for the special charter rate of 1 year (12 issues) for only $11.97. That's $11.43 off the newsstand price and $6 off the regular subscription rate.

☐ Payment Enclosed ☐ Bill Me Later (U.S. only)
☐ I prefer to charge my credit card
☐ MasterCard ☐ VISA

Card No.__________ Exp.____

Signature__________

Name__________
(Print)

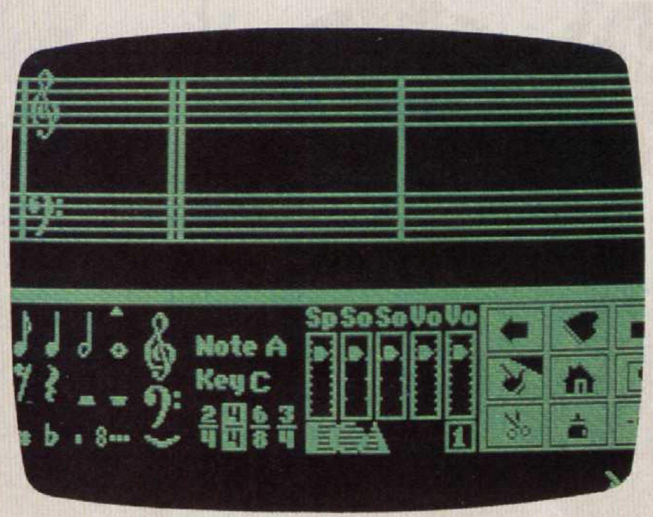
Address__________

City/State/Zip__________

740005

Add $4.00 for Canadian & $20.00 for foreign orders. Please allow 6-8 weeks for receipt of first issue. Payment must accompany foreign orders.

Mail to: Home Computer Review, P.O. Box 950, Farmingdale, NY 11737



MUSIC CONSTRUCTION SET 🕹🕹🕹🕹

Electronic Arts/Apple

By George Kopp

They all laughed when I sat down at my Apple computer, but when I started to play—they were amazed! My very first effort, an old English round called *Fie, nay prithee, John* (usually attributed to Purcell but this time with some fancy work in the treble by Kopp) was an instant hit. Next it was Mozart's *Eine Kleine Bytemusik* (48K. 456) and tomorrow, who knows? My own keyboard sonata with space bar continuo; perhaps.

The *Music Construction Set* is the brainchild of Will Harvey, teenage disciple of Bill Budge, whose *Pinball Construction Set*, which lets you design and play your own computer pinball game, is already a classic. Instead of bumpers and flippers, though, you position notes on a staff, create harmonies, transpose keys and end up with a terrific sounding piece of music. The program comes supplied with some of Harvey's own transcriptions which give you an idea of just how good the *Music Construction Set* can sound if you take the time. It also comes with a musical game.

There are two things you need to enjoy *Music Construction Set* to the fullest. One is a basic knowledge of how to read music, although with a good teacher to guide you through the rudiments, the *MCS* is a great teaching tool. The other is the Mockingboard, an Apple peripheral made by Sweet Micro Systems of Providence, RI, which adds two-channel sound and several "voices" to your Apple. (It hooks up in a jiffy, although you have to supply your own speakers.) *MCS* will work without the Mockingboard—sort of. You get two voices, though, instead of six, and both of them are off key. Your compositions will not scroll, either.

Using either joystick, keyboard or Koalapad (a graphics tablet made by Koala Technologies), position your notes on the bass and treble staffs. You can add sharps, flats or naturals, tie notes or do dotted rhythms, adjust tempo and volume, change time signatures and write chords. The Mockingboard gives you up to six voices simultaneously. One limitation is that when you write a chord, all the notes in it must be of the same duration. Another limitation is that you cannot write triplets, so Ravel's *Bolero* is out. The program offers cut-and-paste editing which allows you to move blocks of music from one part of the piece to another, and if you have a printer you can get hard copy of your creations. From the top! A-one and a-two...

The program has some trouble reading dotted rhythms. To play it safe, tie notes together instead—unless you're looking for a Charles Ives effect.

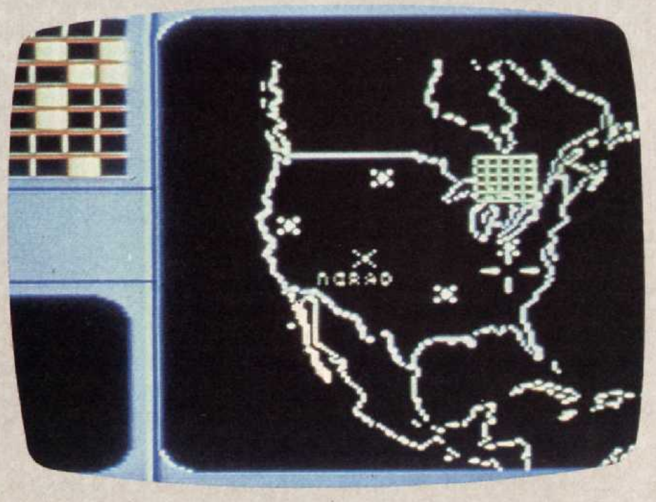
COMPUTER WAR 🕹🕹🕹

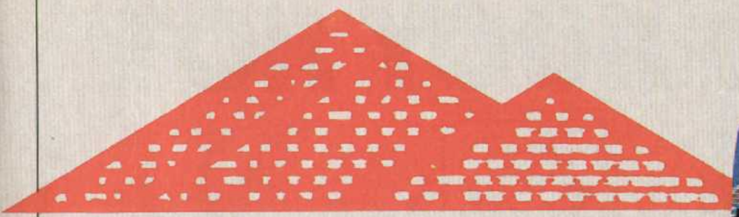
Thorne-EMI/Atari 400/800/1200

By Randi Hacker

Those of you who saw *WarGames* and then rushed right home, connected your modem and had your computer start dialing all possible numbers in Denver in hope of accessing the military computer, will love *Computer War*. It's based on the movie and even has several of the more famous quotes from the script including the one about playing a game of chess. On the other hand, if you came home from the movie hoping only to be able to change your grades, well, this cart won't give you that power. It does, however, make you responsible for what could be a global nuclear war.

The point of *Computer War* is to locate and destroy attacking missiles before they locate and destroy the major American missile bases at which they've been aimed. Although the missiles are merely a simulation and *not* Russian, the computer can't tell the difference. Unless you act fast, the system will launch a counter-





attack that will destroy most of the world. The display consists largely of a map of North America with hovering white blips and two banks of flashing lights (more about those later). The white blips are missiles. You decide which one poses the greatest threat to our missile bases and then position your rectangular cursor over it. A press of the fire button then zooms you in on that area and you begin to track the missile down by moving your joystick in the direction you wish to move. You are given both visual and auditory cues as to the position of the missile—a marker indicates whether it's to the left or right and a series of bleeps get shriller and faster the closer you approach. Once you sight it, shoot it and return to the map. Time is a-wasting. Even as you track one missile, the other missiles are continuing on their relentless courses.

After destroying all the missiles, you turn your attention to the lights. You have a limited amount of time to match a pattern shown in the smaller of the two banks with a section of the larger bank above. If you succeed, you haven't saved the Earth. Instead, you're presented with an even harder game next time around. So much for military honors. The graphics are spartan but who needs pretty pictures when the fate of the free world is at stake?

Of the many games in which you've got to nuke everything in sight, *Computer War* is by far the best, combining the need for cunning strategy and quick-reflexes. In fact, the segment in which you actually shoot the enemy missiles is very tough. You can't afford to overshoot your mark by even a little bit. Valuable time is wasted waiting to slow down before you can rev up and move in the other direction.

Start slowing down when the beeps start speeding up. If you time it right, you'll stop dead just as the missile appears on screen.

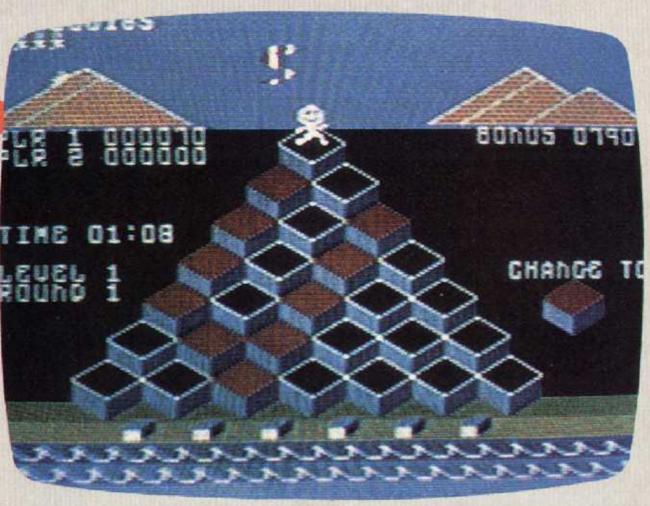
PHARAOH'S PYRAMID

Master Control/Atari 400/800/1200

By William Michael Brown

To be worthy of my time and money, a *Q*Bert* clone has got to offer something the original didn't have—such as a stronger plot, more and/or weirder enemies, and tougher reflex and strategy tests. *Pharaoh's Pyramid* manages to succeed on all three counts, and does so with some of the most colorful and well-animated 48K Atari computer graphics I've ever seen.

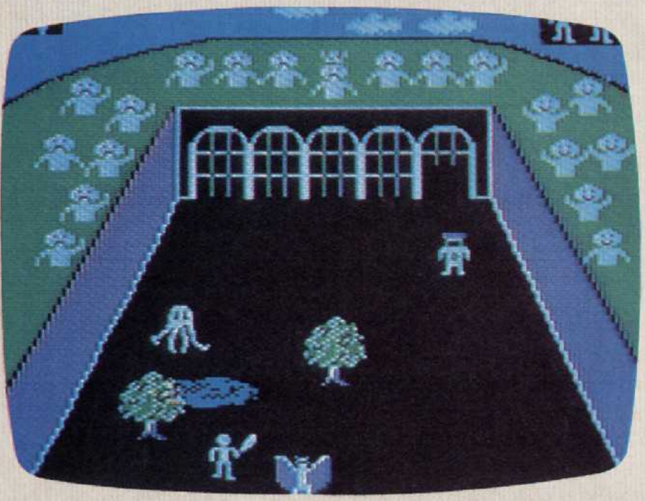
The basic *Pyramid* plot casts you as Digger Dan, a solitary grave robber who has been dragooned by the restless ghost of Ramses into completing that monarch's last great pyramid. With the help of his old flame Isis, Ramses transports you back to his heyday, where you become Little Achmed—a trusted slave who must run up and down a long pyramidal staircase, dragging bricks back up to the top during each trip. Once you've fetched enough to complete one of the six courses of a pyramid, you've then got to go back and finish turning each of the steps to a target color shown in the lower right corner of the screen. Once *that's* over, you face a challenge from Isis' jealous mate Osiris which, if successfully met, will raise you a level and bring you closer to the goal of completing the whole pyramid and winning Ramses' treasure.



All that would be fairly standard *Q*Bert* revisionism, except that *Pyramid* comes packed with extra features and twists on *Q*Bert* tricks—enough to make this game ten times tougher than its ancestor. For instance: changing the step colors in *Pyramid* takes the most difficult task in *Q*Bert* (completing those screens where the blocks change color every time you step on them) and makes that the standard problem throughout the game. You're also pursued by a veritable host of enemies—nine in all, some of whom are similar to Coily, Sam and the other bozos from *Q*Bert*, and others who are like nothing you've ever met before. There are also no easy outs: Isis does show up every now and then with a magic diamond that'll clear the board for you temporarily, but it doesn't work for long and always brings out Osiris, who'll undo all your careful color change work. There's a lot more, including a cup of life that will add to Achmed's lifespan and a secret message that could win you a T-shirt and poster from Master Control.

More than anything else, though, I can't compliment the *Pyramid* graphics work enough. The colors are wonderfully bright and clear, Little Achmed's jumps are smooth and realistic (including falling off the steps), and the intermission screens featuring Isis and Achmed are quite amusing. If any designers out there are looking for a model Atari computer game, this is it.

If the Plagues and Moses' Snake are just too much for you, hang out on the brick level for awhile until they disappear. They can't get you there.



THE LAST GLADIATOR

Electronic Arts/Apple

By Randi Hacker

When it came to spectator sports, the Romans really knew how to please a crowd. They gave them gladiators and blood. Plenty of it. These days, spectator sports are tame. There's not a lot of excitement in professional golf, for example. This is because the element of danger is missing. Unless you accidentally get your foot caught in the ninth hole and trip, it's a pretty safe game. On the other hand, there's a lot of danger and excitement in being a gladiator. Particularly if you're the last gladiator as you are in Electronic Arts' challenging and blackly humorous new game aptly called *The Last Gladiator*.

After choosing your weapon from an arsenal which includes javelins, tridents, boomerangs, guns and a club and net combination, you, the gladiator or gladiatrix, are released into the arena of the great Coliseum at Rome. Usually it is empty. Occasionally trees, boulders and a pond appear which can be used to your strategic advantage. Your weapon appears at the far end of the field. To pick it up, you simply walk over it. Then the games begin. Monsters such as giant spiders, snakes, vampires and the intimidating Mordo the Spaz enter from damp dungeons behind grilled gates underneath the royal box. Yes, the King is watching and so is a large crowd. Half of them are for you. The other half would like to see you die in a big way.

Some of the weapons are harder to manage than others. The gun is a snap, while using the trident is more difficult as you've got to get up very close to the beast, press the joystick in the direction in which you wish the trident to swing and then press fire button one to make contact with the enemy's head. Using the net and club combo requires the use of both fire buttons—zero releasing the net and one swinging the club. Weapons such as the javelin must be retrieved when thrown, often at considerable risk particularly if you miss your mark. Once you've defeated all the monsters, you get to face the sadistic King who is a homicidal maniac and will stop at nothing to satisfy his bloodlust.

Far from being just another club-'em-up game, *The Last Gladiator* combines strategy, danger and a good deal of humor in a contest that is as much fun to watch as it is to play. Believe me, once you've gotten a taste of blood, you'll never go back to birdies, eagles or niblicks again. An all-around fine example of why Rome was such a fun place to be both a spectator and professional athlete.

When using the club or pitchfork, get behind the monster and hit him on the head when he's below you on the screen. This is the most efficient way to murder him.

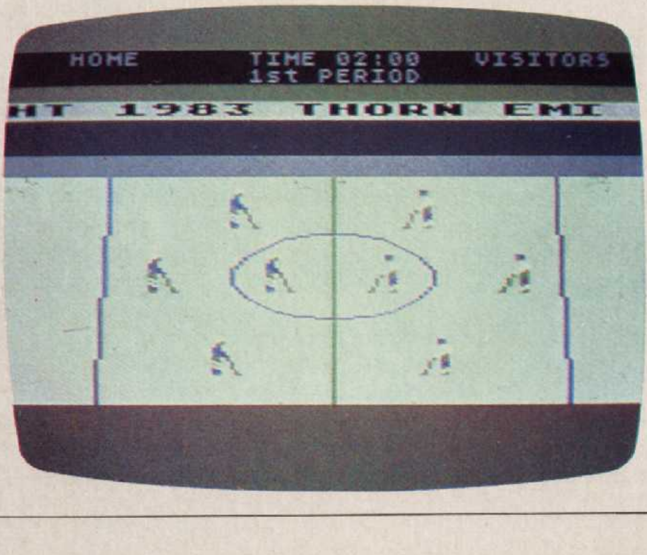
MAJOR LEAGUE HOCKEY

Thorn EMI/Atari 400/800/1200

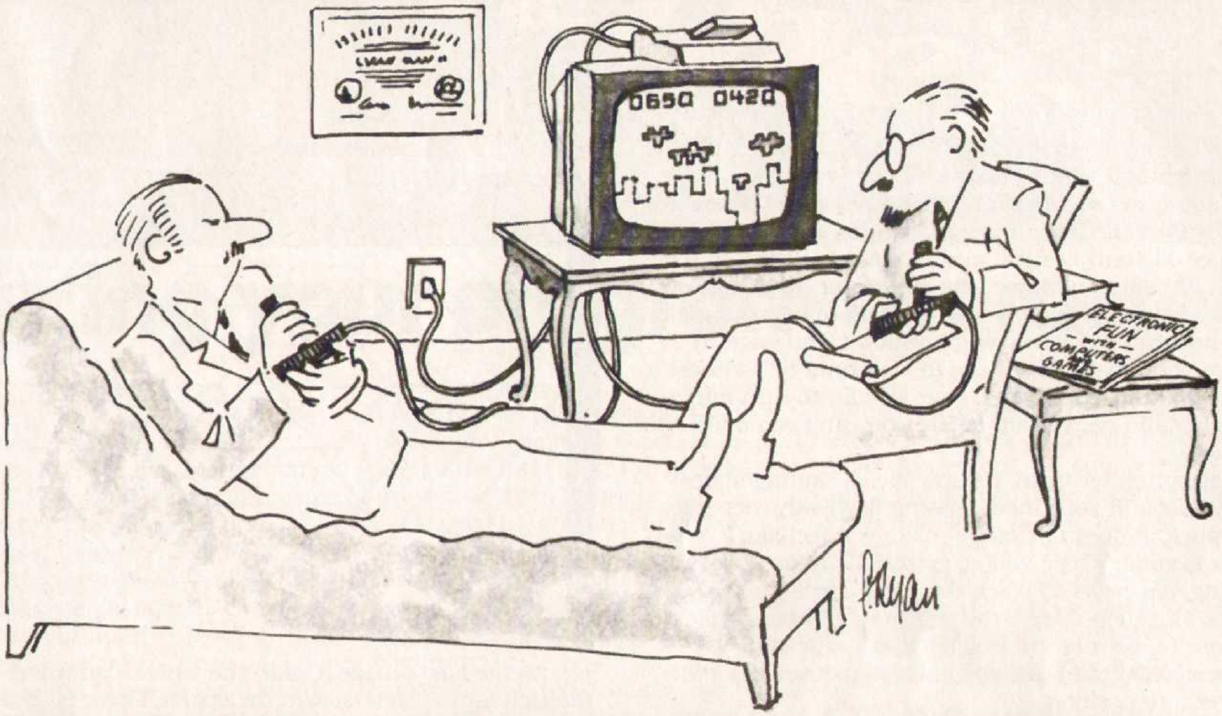
By Kim Mills

Major League Hockey is not a game for the faint-hearted or feeble-fingered. But if you're feeling feisty and don't mind a little video violence, sharpen up your skates and face off. After that, watch out, because that's what this game is about—watching and reacting within fractions of seconds.

To taste the occasional thrill of victory, take a tip right here; challenge a friend whose hand-eye coordination rivals your own. If you're a masochist and



GET PROFESSIONAL HELP FOR YOUR OBSESSION:


0650 0420
ELECTRONIC FUN WITH COMPUTERS GAMES
P.Ryan

ELECTRONIC FUN WITH COMPUTERS & GAMES

SUBSCRIBE NOW AND SAVE!

It's the video game magazine you can believe in. Because it's just as hyper about hi-tech as you are. And it's put out by *Video Review.* So you know it's definitive:

It's *Electronic Fun with Computers & Games.* (Whew) *EF* for short.

EF helps you pick the games and pick the brains of the guys who create them.

EF gives you software secrets for super scores and helps you outmaneuver the most fiendish electronic adversaries.

EF lets you interface with the hottest arcade wizards and joystick generals, and pick up tips and hard-won strategies for success.

And, *EF* reviews, previews and rates all the games—arcade, cartridge, and computer—so you don't waste your wallet on the dogs.

Most of all, *EF understands* and shares your obsession.

Try a little professional help. Make an appointment for a year of *Electronic Fun,* using the attached card or coupon to order.

SEND PROFESSIONAL HELP!

☐ **O.K.** set me up with a year's subscription to *Electronic Fun with Computers & Games.*

☐ Bill me later for **$11.97** (over $20 off the newsstand cost and $6 off the regular subscription cost)

☐ I prefer to enclose payment now.

☐ Charge to my credit card:
☐ VISA ☐ MasterCard

Card No. ______ Exp. Date ______

Signature ______

Name ______

Address ______

City ______ State ______ Zip ______

Add $4 for Canadian & $20 for foreign orders. Please allow 6–8 weeks for delivery. Payment must accompany foreign orders.

Mail to: Electronic Fun, P.O. Box 947, Farmingdale, NY 11737 740004 enjoy the agony of defeat, pit your puck against the computer and watch it skate all over your men. The machine, you see, has an unfair advantage. Whenever you want to activate a player, you have to press the trigger on your joystick, and the player closest to the puck (if he doesn't have it in possession) changes to a number on the screen corresponding to your joystick position. So, if you're using joystick 1 and want to move your goalie, you have to wait until he's closest to the puck, pull the trigger, wait for him to turn into a number and back again before you can even make him move.

The computer team, meanwhile, is skating figure eights around your men, passing flawlessly, never icing the puck. It doesn't exactly make you feel like a New York Islander. Once you've gotten the hang of the timing, it's easier to block the computer's well-aimed shots. But then there's the problem of finding a player to pass to, because as long as your goalie is in possession of the puck you can't maneuver any other player into position.

Playing with a friend is far more satisfying, since he'll have the same handicaps as you. Your opponent will also have to play the numbers game with his men, and you'll discover your fellow human makes mistakes the computer doesn't.

The graphics and sound effects for *Major League Hockey* are fairly standard (how creative can you be with a hockey rink?), and the men aren't as lifelike as those in, say Activision's *Hockey*. But the rink, which scrolls from right to left, adds realism, since it's much larger and not just the size of one screen.

Major League Hockey is fast-paced (although there are three levels of difficulty, all seemed equally tough), challenging and frustrating—factors that add up to a game that might just hold your attention until the baseball season.

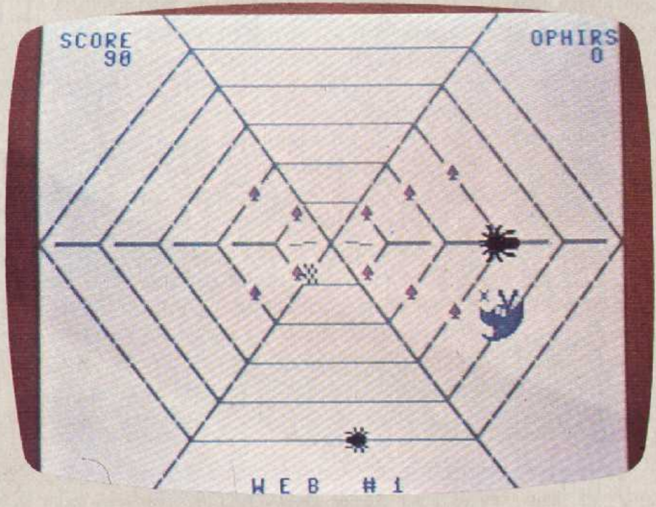
Once you've got control of the puck, break away from the pack and skate your butt off. Passing is risky business because you can't position a man to receive.

OPHIR

Arcade 64/Commodore 64

by Charles Ardai

What is the first thing that comes to mind when you hear the opening strains of the Toreador Song from *Carmen*? Whatever you thought of, the chances are that it wasn't a fat blue whale being chased by a giant spider while appropriating said spider's priceless jewels. But then again, the chances are that you haven't played *Ophir* recently, either.



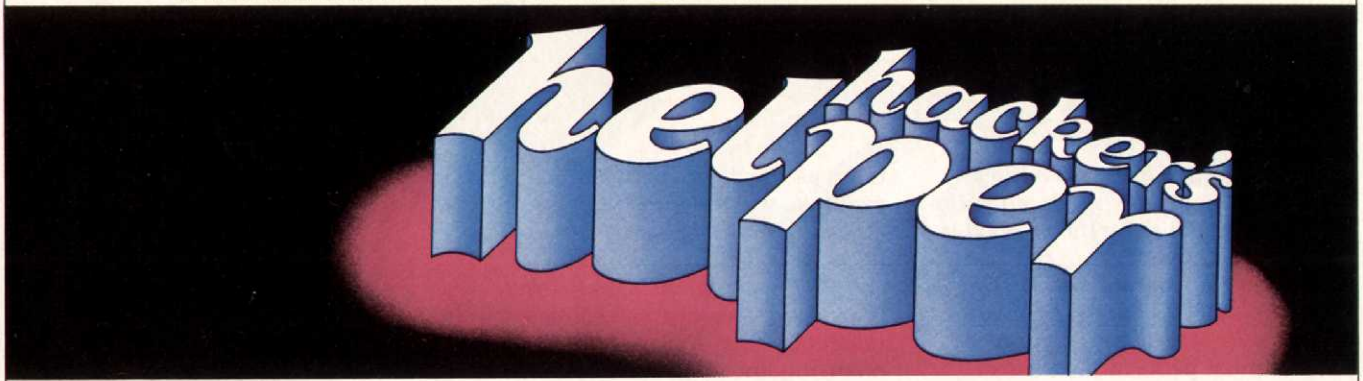
The entire contest takes place in the spider's web, represented as a maze. Ophir, the whale, can travel throughout the web, as can the spider. Ophir is assisted by a helpful creature, named Omni, who sits on his head and fires lasers. If the spider comes into contact with any part of Ophir's anatomy, you lose one life. Scattered around the maze are the jewels; Ophir picks these up by running over them. After all of the jewels on a level have been picked up, you advance to the next level with new types of jewels and adversaries. In later levels you'll notice a growing abundance of 'sticky spots', represented by checkerboard designs, which slow Ophir down. Periodically, the spider lays large red eggs. Ophir can eat these for 200 points or shoot them for 100, but wait too long and they'll hatch into tiny green spiders. These spiders are just as deadly as the original one, but they can be killed by Omni's laser. However, if you let them live too long, they'll turn black—and invulnerable.

Joystick control is a bit awkward, especially on the diagonal portions of the web, but it's bearable. The spider is very intelligent, and by the fifth web is sure to get you. *Ophir* isn't an easy game to master, and it always keeps coming up with new ways to challenge you.

The best part of *Ophir*, as with many Commodore 64 games, is the music. At the beginning of each web, "Toreador" is played, and when the game ends we are treated to an ominous, eerie tune. The sound effects are equally masterful, from the lilting sound of Ophir's movement to the foreboding march of the spider.

Ophir is not by any account new or unique. Nevertheless, it has a sophisticated air of fun about it that most new carts lack.

Never wait for the eggs to hatch; eat them up as soon as the spider lays them.



Giving your program character

By Robert Alonso

In the Fifties, it was considered very cool to have a customized car. This meant buying a standard model and then embellishing it so that it had a personality all its own. You added racing stripes, changed the color, put in an "Ah-ooga!" horn or, if you were from Texas, added two huge bull horns to the front fenders. Similarly, most personal computers come with certain graphic characters already defined and built in. You can use them as characters in the games you write but you can also design custom characters that are reflections of your imagination instead of some computer company's idea of good-looking alien life. A lot of people think, however, that doing this is difficult. They think they'll have to spend a substantial amount of time plowing through Advanced Calculus books learning all there is to know about binary code in order to create custom characters. This is a falsehood. Creating custom characters is simple—so simple, in fact, that after you learn how, you'll never admit to anyone that there was a time when you didn't know or understand the procedure.

Strange Customs

All you need to know before sitting down to design custom characters is how to solve integrals and differentiate complex functions. Wait! Wait! I'm kidding! What you *really* have to know is addition, and if that gives you trouble you have to know how to use a pocket calculator. The table is set up to design the little alien I've used in my game, *Alien Landers*.

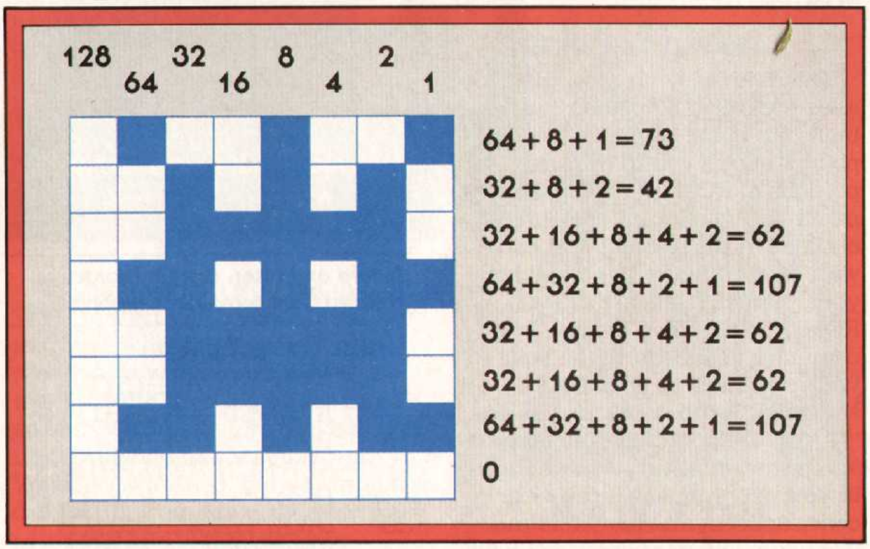
I started by drawing an eight square by eight square grid on a piece of graph paper. Each row (going across) represents one byte of RAM. The eight boxes in the row each represent one bit. In the squares I've colored in, that bit would be "on" once I've entered the data into the computer; the white squares would be "off". The numbers on top correspond to the digital code which the computer understands that tells it which bits are on and off.

Once you've drawn your grid, the next step is to draw your character, just the way I've done, by shading in the boxes. Then you perform the simple arithmetic at the right of the chart. In the top row, squares 64, 8 and 1 are shaded. The sum of those three numbers, 73, will tell the computer which bits in that byte are on. Do this for each row, and don't forget 0 if one of your rows is unshaded like my bottom row.

Make A DATA

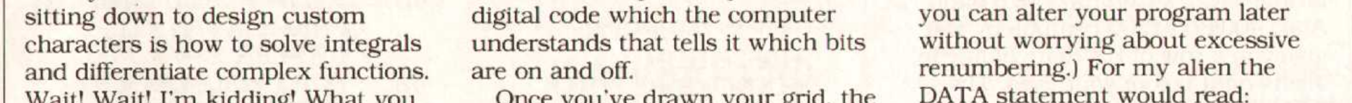
The next step is to enter this data into your computer. First of all you would add a DATA statement to your program, after END. (This is so you can alter your program later without worrying about excessive renumbering.) For my alien the DATA statement would read:

```
800 DATA 73, 42, 62,
  107, 62,62, 107, 0
```



128	64	32	16	8	4	2	1	
□	■	□	□	■	□	□	■	64 + 8 + 1 = 73
□	□	■	□	■	□	■	□	32 + 8 + 2 = 42
□	□	■	■	■	■	■	□	32 + 16 + 8 + 4 + 2 = 62
□	■	■	□	■	□	■	■	64 + 32 + 8 + 2 + 1 = 107
□	□	■	■	■	■	■	□	32 + 16 + 8 + 4 + 2 = 62
□	□	■	■	■	■	■	□	32 + 16 + 8 + 4 + 2 = 62
□	■	■	□	■	□	■	■	64 + 32 + 8 + 2 + 1 = 107
□	□	□	□	□	□	□	□	0

Byte the alien: Translating your character into a DATA statement.



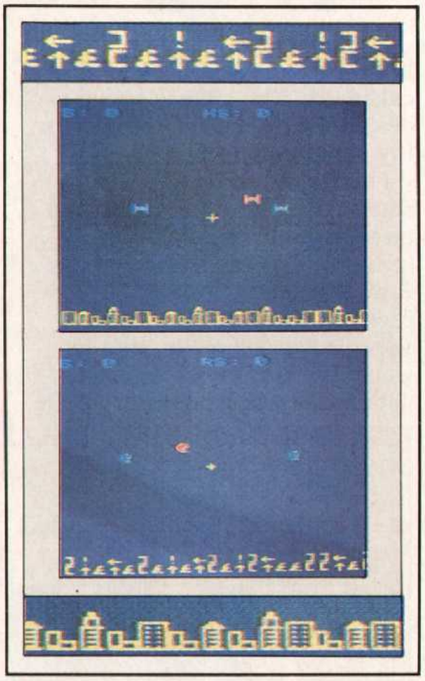
As you can see, the DATA statement is simply made up of the sums I arrived at by the method I described above.

To get the character on the screen I've got to POKE it into the computer's RAM, but before I can do that I must perform the neatest computer trick of the week. The "character sets" on all home computers are in ROM, not RAM. Character sets refer to the code that tells your computer to type, for example, a "B" when you press the "B" key, and ROM, as you probably know, stands for "Read Only Memory". As the name implies, ROM cannot be altered—it can only be "read" by your computer, like a book. So if you want to alter your computer to get an alien to print when you type "B", as I have done, you must first find a way to take the code out of ROM and put it into RAM which stands for "Random Access Memory" and which, unlike ROM, can be changed.

Making A Point

This is an easy process, thanks to a feature called a "pointer" which is built into home computers. The pointer allows you to transfer portions of ROM into RAM. Simply punch in the relevant code (it's outlined in the manual that comes with your computer) and suddenly your character sets are in RAM, not ROM. You can then instruct your computer to substitute the code you've outlined in your DATA statement for the code for the letter "B" (or "D" or "X" or any letter you choose that you won't be using in your program.) You can also construct custom characters that use many letters at once, as I have done for the city graphic in *Night Attack*.

The following programs in BASIC, for the VIC-20, Commodore 64 and Atari 400/800/1200 computers, will give you a row of B's that change to aliens right before your eyes. The REM statements explain each line, and you can easily experiment with them as much as you want. For example, try designing your own custom-character to replace my alien—that would mean changing the DATA statement. Or you could try poking your character into a different letter—that would mean changing line 45 in the VIC-20 program, line 85 in the C-64 program and line 50 in the Atari program.



Before and after: custom characters created from computer's graphics set.

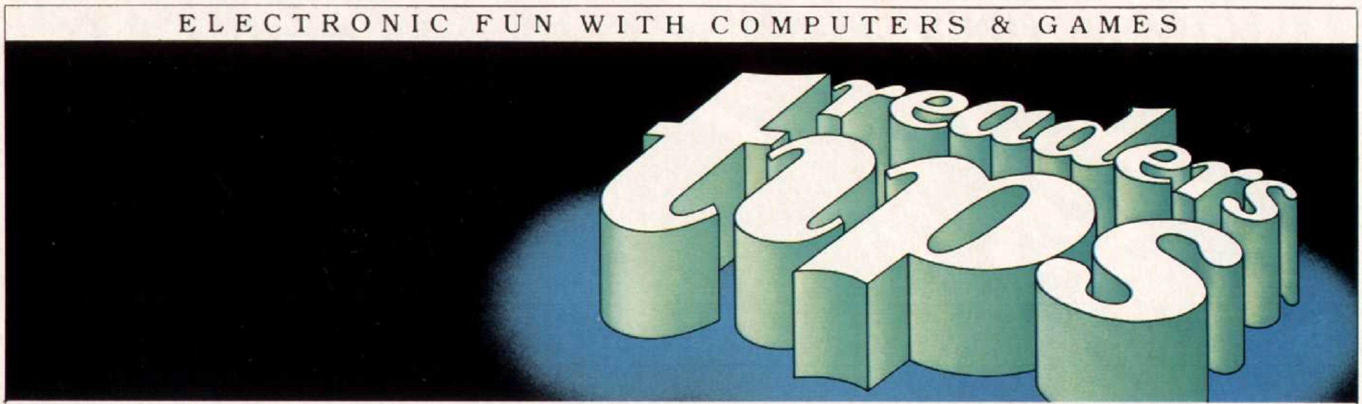
ATARI

```
10    REM BY, ROBERT
      ALONSO — ATARI
15    REM ***CLEAR
      SCREEN AND PRINT
      B'S***
20    GRAPHICS 0:PRINT
      "}":POKE 752,1:SET-
      COLOR 2,1,0:POSITION
      0,23:? "B B B B B B B B
      B B B B B B B B B B B
      B"
25    POKE 756,PEEK
      (106)-8:REM
      POINTER SET TO 8
      PAGES UNDER THE
      TOP OF RAM
30    REM ***CHARACTER
      SET EXCHANGED
      FROM ROM TO
      RAM***
35    RA=256*(PEEK(106)-8)
40    FOR I=0 TO 1023:POKE
      RA+I,PEEK(57344
      +I):NEXT I
45    REM ***ROUTINE TO
      POKE DATA INTO
      LETTER B***
50    FOR J=272 TO
      279:READ A:POKE
      RA+J,A:NEXT J
55    REM ***ROUTINE TO
      MAKE THE SCREEN
      SCROLL NINETEEN
      TIMES***
60    FOR Z=1 TO 19:? :FOR
      D=1 TO 200:NEXT D:
      NEXT Z
65    POKE 106,
      PEEK(106)-8:REM
      PROTECTS
      CHARACTER SET
70    END
75    REM ***DATA FOR
      ALIEN CREATURE***
800   DATA 73,42,
      62,107,62,62,107,0
```

VIC-20

```
10    REM BY, ROBERT
      ALONSO — VIC-20
15    REM ***CLEAR
      SCREEN AND PRINT
      B'S***
20    PRINT "]": PRINT "▮B
      B B B B B B B B B B"
25    POKE36869,255:REM
      POINTER SET TO
      POINT TO 7168
30    REM ***CHARACTER
      SET EXCHANGED
      FROM ROM TO
      RAM***
35    FORX=7168TO7679
      :POKEX,PEEK
      (X+25600):NEXTX
40    REM ***ROUTINE TO
      POKE DATA INTO
      LETTER B***
45    FORY=7184TO7191:
      READA:POKEY,A:
```

Continued on page 93



readers tips

XEVIOUS

There are hidden targets which you have to bomb to uncover. When you bomb them, they become flags with a small "S" next to them; fly over the "S" when it's uncovered, and you'll get a free ship. The first flag is located on the left-hand side of the river that enters from the left: the second is just to the right of the mouth of the big C-shaped inlet: the third is at the very end of the longest pier: the fourth is at the bottom of one of the bird's tail features.

Rodney Mullineaus III
Washington, DC

DECATHLON

You can get much higher scores on the pole vault section of this challenging game. Run, plant the pole, and when the pole starts to go up, wait until it is almost straight up. Then press the button six or seven times as fast as you can—you'll soar much higher then normal, even achieving heights of eight meters or more!

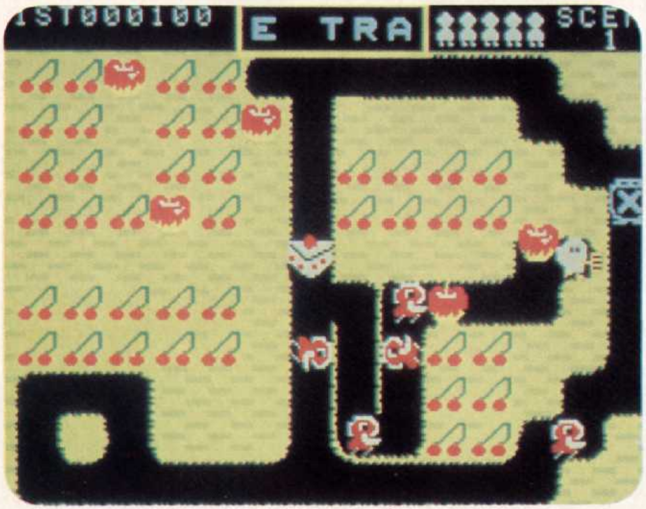
John Entwistle
Jackson, NJ

M NETWORK FOOTBALL

When you have the ball, run straight ahead and let your opponent catch up to you. Just when he almost touches the ball, turn and run the opposite way and he will go right through you (be careful; he might come back for you anyway).

Matt Dorsett
Deer Park, TX

MR. DO



I've discovered a way not to ever "die" in the Coleco game. First, get to a level where there are two apples in a row, push the apples together and then dig under them so both will fall. Before they fall, get under the one that will fall first. You'll get squished, but you won't be dead to the computer; the only way to die is if one of the bad guys touches your squished body.

Mark Carlson
Woodside, CA

KANGAROO

On the Atari home game: when you're on the second floor on the first board, be sure to wait until an apple falls before you climb up.

Kevin Lennon
Troy, NY

SPIDER FIGHTER

For higher scores, play on the expert level until you lose two or three of your men. Then switch back to the regular game, regain your men, then put it on expert again. Continue this until the game is over. It will improve your score, because you get more points on the expert level.

Eric Hallman
Delran, NJ

PENGO

In the earlier rounds, don't take unneccessary risks to line up the diamond blocks. Try instead to clear the icefield of Sno-Bees as fast as you can: you may get up to 5,000 points, which is just as much as you'd get if you'd lined up the diamond blocks against a wall.

"WES" Horton
La Habra, CA

KABOOM!

Always let a bomb detonate before you reach a thousand points. This drops the speed of the bombs down to the previous level, and is usually enough to replace the sacrificed bucket.

Tom Vogel
Pittsburgh, PA

Do you have a tip for your favorite game? If it's good, we'll print it in Reader's Tips. *Send tips to:* Electronic Fun, *350 E. 81st St., New York, NY 10028.*

ELECTRONIC FUN'S TOP 10

HOME

1. Q*BERT (ALL) (Parker)
2. DECATHLON (A) (Activision)
3. ENDURO (A) (Activision)
4. JUNGLE HUNT (A, AA) (Atari)
5. MS. PAC-MAN (A,AA) (Atari)
6. BURGERTIME (I) (Mattel)
7. TIME PILOT (C) (ColecoVision)
8. FROGGER (ALL) (Parker)
9. PLAQUE ATTACK (A) (Activision)
10. DEATHSTAR BATTLE (A) (Parker)

ARCADE

1. DRAGON'S LAIR (C'tronics)
2. POLE POSITION (Atari)
3. STAR WARS (Atari)
4. MS. PAC-MAN (Midway)
5. KRULL (Mylstar/Gottlieb)
6. GYRUSS (Centuri)
7. CHAMPION BASEBALL (Sega)
8. GALAGA (Midway)
9. Q*BERT (Mylstar/Gottlieb)
10. STAR TREK (Sega)

COMPUTER

1. FROGGER (Sierra)
2. DEADLINE (Infocom)
3. TEMPLE OF APSHAI (Epyx)
4. ZAXXON (Datasoft)
5. ZORK II (Infocom)
6. ZORK I (Infocom)
7. ZORK III (Infocom)
8. FORT APOCALYPSE (Synapse)
9. BLUE MAX (Synapse)
10. FLIGHT SIMULATOR (Microsoft)

The arcade Top Ten courtesy of REPLAY MAGAZINE. The computer Top Ten courtesy of SoftSel. The home games Top Ten is the result of a nationwide poll. (A) stands for Atari, VCS, (I) for Intellivision, (AA) for Atari 5200 and (C) for ColecoVision.

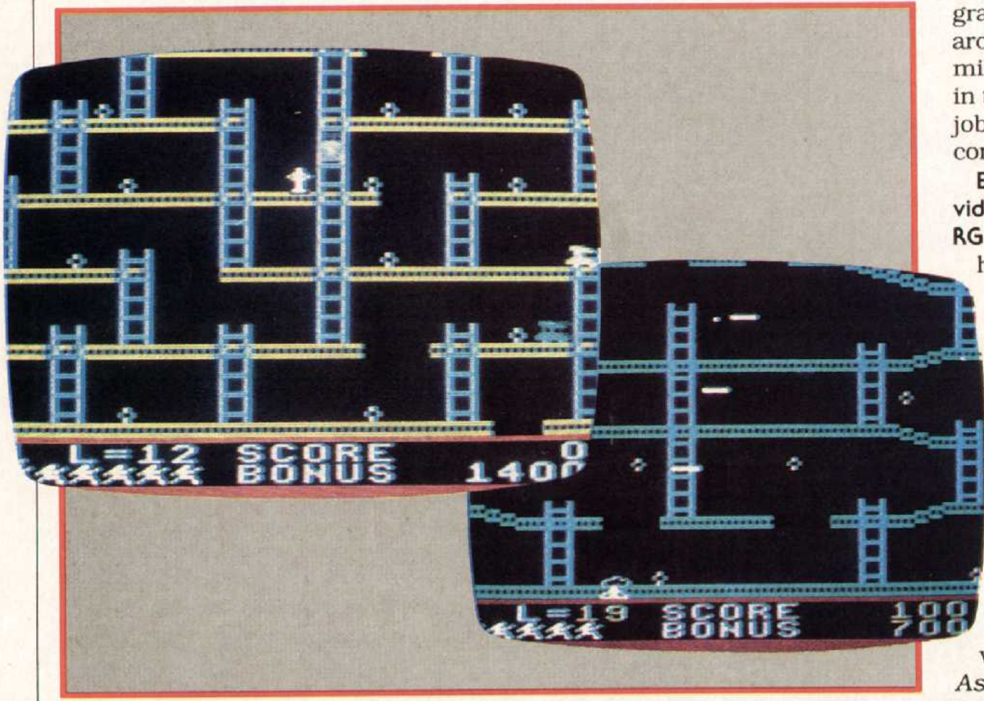
Computer Top Ten courtesy of Softsel

GAMEMAKERS

JUMPMAN of the year

Randy Glover's game of shoots and ladders

Stop the presses! Dumbwaiters are back. Yes, friends, those antique devices appear on one level of Randy Glover's game Jumpman Junior, *the sequel to Randy's first game,* Jumpman. Jumpman *was named to the Consumer Electronics Show Software Showcase in 1983. Randy designed the game, graphics and sound effects and programmed the code himself. He has yet another game—*Lunar Outpost*—which, he says, has a stunning display and complicated play. Most amazing, he's done them all without a vacation.*



Above, the Robots II screen and the Ladder Challenge screen from JUMPMAN. Below, some Epyx games. SILICON WARRIOR and PIT STOP were not designed by Randy.

INTERVIEW by Phil Wiswell

EF: You have already designed two successful computer games, *Jumpman* and *Jumpman Junior*. What is your computer background?

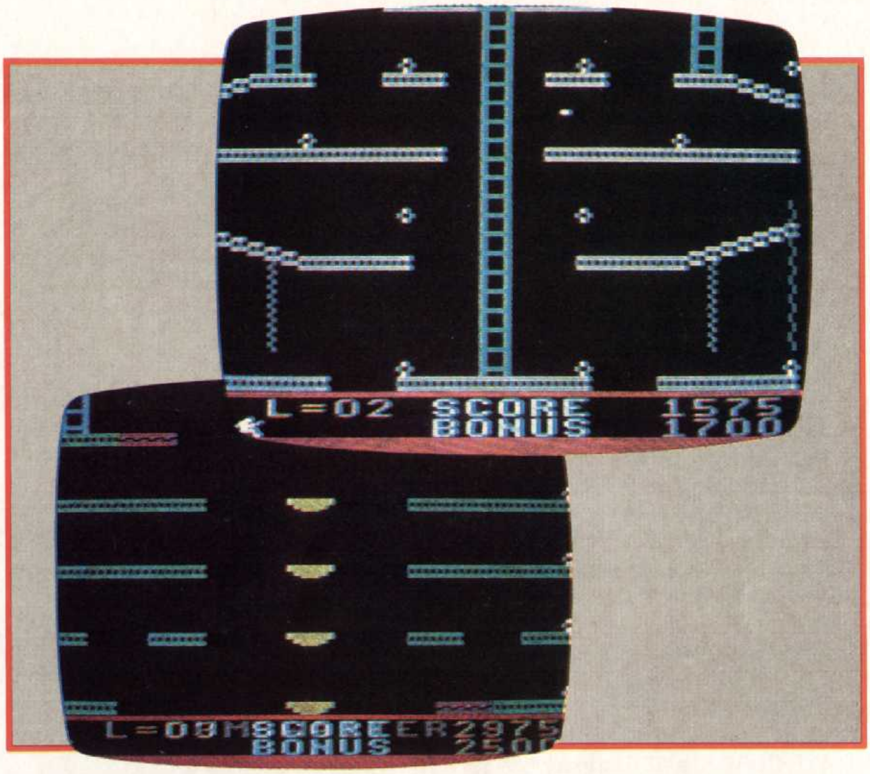
EF: No college degree?

RG: No college degree. I got out of high school and worked in the restaurant business with programmable cash registers. Finally I decided I needed to go into some sort of profession and I picked up on electronics. I got some schooling and background in electronics repair and design, and started working as a technician. In the meantime I also started getting interested in computers. I heard about the TRS-80 when it first came out, and my brother and I bought one just to see what it was like. We started playing around with it and having a great time programming. I ended up playing around with computer programming as a hobby, something to do in the off hours. And through my job I also ended up working on computers.

EF: Was this about the time arcade videos began catching your fancy?

RG: I won't say I've ever been a heavy-duty arcader, but I did frequent arcades and play with pinball and some of the early videos. I had watched *Space Invaders* being played a lot, and I played it a bit, but I really got into it with *Pac-Man*. That was one of the first games that made me say "What kind of a game is this!?" Then I started playing *Defender*. It took me a while to get used to that one, but once I did I liked it a lot. I would guess about the time of *Asteroids*, or just before, I really started getting interested in assembly language. About two and a half years ago I wanted to get some computers other than the TRS-80, which we'd had for a few years, so I got into the Atari 800,

EPYX
Strategy Games for the Action-Game Player
Silicon Warrior
EPYX
Strategy Games for the Action-Game Player
JUMPMAN
Strategy Games
Jumpma



Above, Son of JUMPMAN. Two screens from JUMPMAN JUNIOR: The Electrocution level and the Dumbwaiter screen which brings back the good old days.

and at the time I was completely ignorant of computer games.

EF: How does one pick up assembly language? The same way I picked up BASIC, by working at it?

RG: In a sense, yes. It's a little harder than BASIC and you have to keep track of more details. But you get a book and you pound away at it. I remember when I was working with BASIC, I had a book with some instructions. I took the first instruction and typed it in. Error. What error? I figured it out. You get to a certain point that way where you really become interested or good at it, and you start realizing that all the different commands can *do* something. And that's when you start integrating all the commands to do something either practical or fun. That's also the point where a lot of people drop it. They can't put the conceptualizing together. They understand the commands but, if you can't put it all together, you're not going to have fun writing programs.

EF: Is the Atari 800 the best game machine?

RG: Well, now I'd have to say the Commodore 64. I don't like it quite as much as the Atari, but it's got a lot of nice features.

EF: You wrote JUMPMAN on the Atari. Wat it your first game?

RG: Yes, it was my first professional, published game.

EF: How did the idea for JUMPMAN come about?

RG: It started while I was learning about the Atari 800. I'd only had the Atari since August of 1982 and I wanted to play around with the Atari features, to learn 6502 machine language. I knew I wanted to use some of the features, so I put up a few characters, one of which was a little man I liked. Then I said to myself: I want to make this man run around. A *Donkey Kong*-type game was something I could try out the Atari features on, so I built up ladders, girders, and what not. I started running the man around—not very well or very professionally—but he moved. I thought about what kind of game could go with this, and I couldn't think of anything *overall*. I decided that in order to make it fun and incorporate all these little ideas that couldn't fit into a single game, I would take all the ideas and apply them to individual screens in the game. For some reason I picked 30 screens as the number I wanted to do. So once I got the basic *Jumpman* working I said: okay, here's an idea for robots, and I put them on the screen; now here's another idea and another and so on. I used little ideas borrowed from other games, some strange things that I thought up myself, and I just started applying them within each screen until I had made up a whole series of them.

EF: That's the hook of JUMPMAN—when you lose you really want to know what the next level is like.

RG: Yes, that's one of the things I wanted in there. It's the same with adventure games—which I used to play a lot—opening that next door

Continued on page 94

EPYX
Strategy Games for the Action-Game Player
Junior
Cartridge for Commodore 64
EPYX
Strategy Games for the Action-Game Player
LUNAR OUTPOST
EPYX
Strategy Games for the Action-Game Player
PIT STOP

COMPUTER WORKOUT

TS 2068

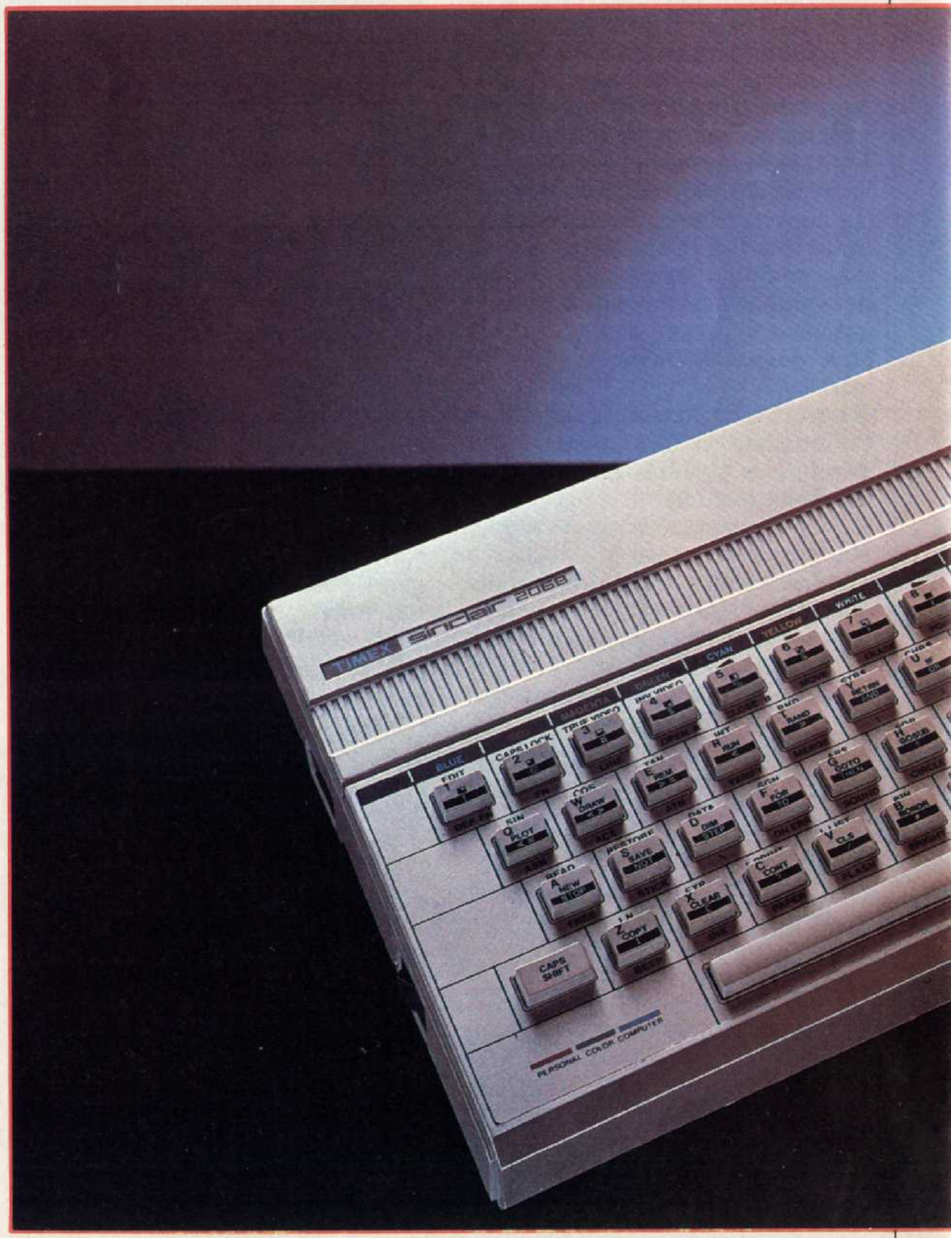
By Jules H. Gilder

While many computer companies play "Waiting For Peanut" before upgrading their current machines, Timex Sinclair has forged ahead with the 2068 Personal Color Computer, which should be readily available by the time you read this. The TS 2068 is a 48K computer that is based on the extremely successful Sinclair ZX Spectrum computer, introduced a year ago in Great Britain. Today, the price of the ZX Spectrum in Britain is £129.95 for a 48K machine. Considering that the TS 1000 (known in Britain as the ZX-81) currently sells here for $45 and in Britain for £45, if we just replaced the pound sign with a dollar sign, we'd have what should be the American price for this system a year from now. In the mean time, Timex is selling the computer at $199.95.

Step Right Up

The TS 2068 is an excellent step up for the person who already owns the TS 1000, ZX-81 or ZX-80. This is especially true since it retains some of the features of these earlier machines, such as the automatic entry of BASIC keywords from the keyboard, while adding many additional features.

The newcomer to computing, however, should take a closer look. Timex hits the nail right on the head on page 12 of the 2068 User Manual when they say, "At first glance, the keyboard looks impossibly complicated—each key has five or six labels..." It not only looks



Timex marches on to 48K

Timex Sinclair is clearly the king of the tiny computer. Last year there was the TS1000, a computer small enough to be misplaced. This year it's the very compact TS 2068 with 46K more memory than its predecessor, bank switching capabilities, a powerful BASIC built in and color graphics.

complicated, it *is* complicated. While they go on to say that "...you'll quickly learn how to use it...", what they're really saying is that they're going to quickly explain to you how to use it. Actually learning to use this keyboard will take extensive practice. With so many functions assigned to each key, you have to wade through a jungle of labels on the keyboard.

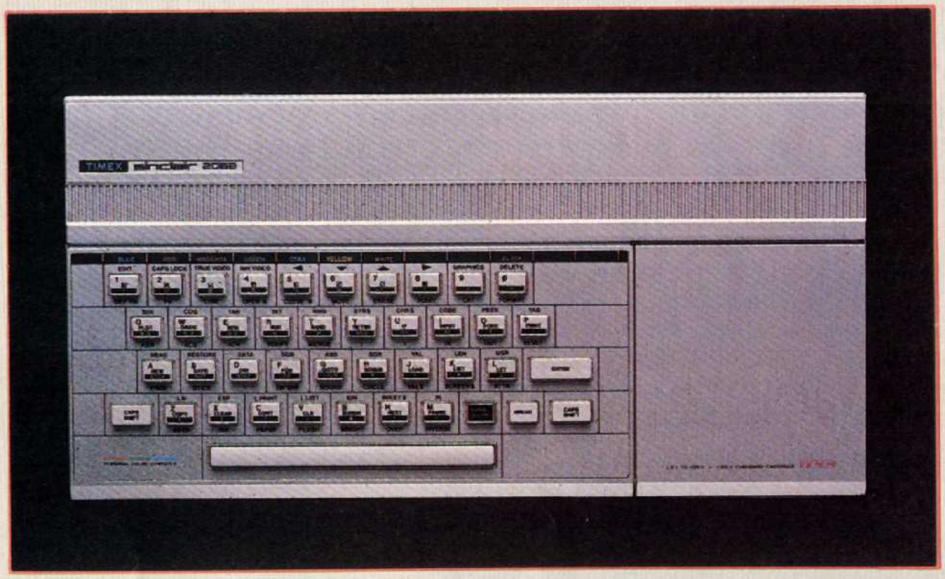
The idea of assigning a key to each BASIC keyword is a good one and could be enormously helpful, if its use was optional and not mandatory. Thus if you couldn't quickly locate the key you wanted, you could type in the keyword itself. But forcing the user to press from one to four keys, either simultaneously or in sequence, to enter the desired BASIC keyword, is not a particularly friendly way of doing things.

Slightly Off Key

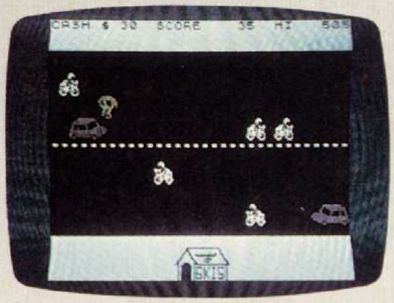
The keyboard consists of 42 full-travel push-button keys. Although it does not look or feel like the standard typewriter keyboard, it is a satisfactory alternative. Both upper and lower case letters are available from the keyboard. Each of the 42 keys has an automatic repeat function if the key is held down longer than a second. The F and J key each have a raised spot on them to help the user locate his fingers on the keyboard. This is a feature you'd expect to find on a typewriter-like keyboard and looks a little out of place here since it is clear that this keyboard is not designed for the touch-typist. The main problem for typing or word processing applications is that there aren't enough keys on the keyboard and the punctuation marks are located in nonstandard positions.

The heart of the TS 2068 is the 8-bit Z80A microprocessor which operates at 3.5 MHz, which is 3.5 times faster than the microprocessors used in many other home computers. The computer features 24K of internal ROM and 48K of RAM. In addition, the TS 2068 has a slot into which mini-cartridges, that can contain as much as 56K of ROM, can be inserted.

While the TS 2068 comes with 72K of memory (48K RAM plus 24K



SPECTRUM
PLAYER



SCORE 00869

ROM), it can handle much more. This is possible because built into the computer is a bank switching capability that can selectively activate different blocks of memory. While frequently used on more expensive computers, this is the first implementation of this advanced memory management technique in low-cost computers. The bank switching technique makes it possible for the TS 2068 to work with as many as 256 blocks of memory that each contain 64K. With the computer's sleek, compact design, it's obvious that this additional memory would have to be contained in external devices. However, the bank switching combined with the capability of having 56K cartridges means that some pretty powerful programs could be run on the computer. Timex has indicated that one of them will be a word processing program which will be available on both tape and cartridge. The company also indicated that it is working on a low-cost printer to go along with the word processing package.

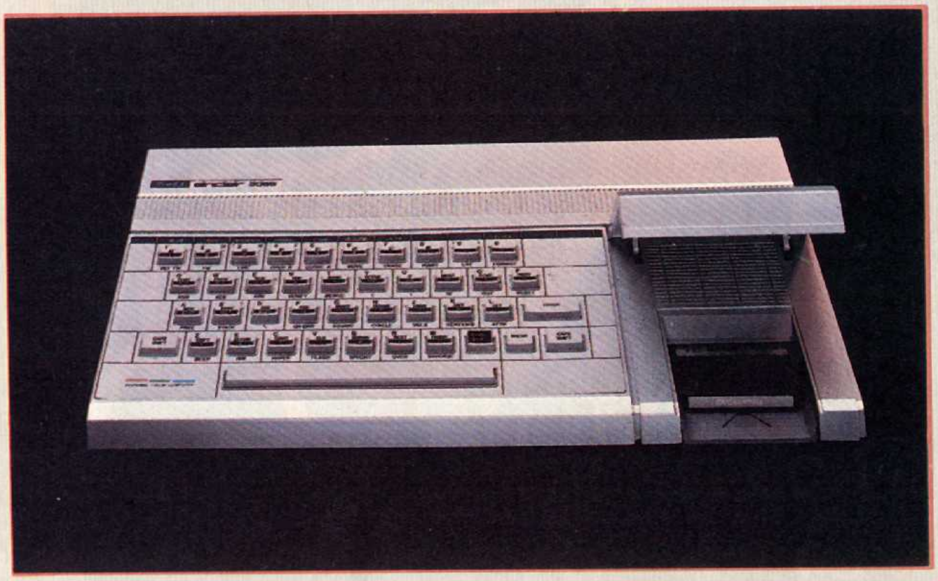
The normal text display of the TS 2068 is 32 characters per line and 24 lines per screen. However, if you wish to connect a video monitor to the computer, using a separate monitor jack, the display can be increased to 24 lines of 64 characters each. Text can be displayed in any of the eight available colors. Another feature of the display is the split-screen capability which allows the user to look at one of two 32-by-24 displays (right or left). This makes it possible to run 64-column applications on an ordinary TV display which can only show 32 columns of data at a time.

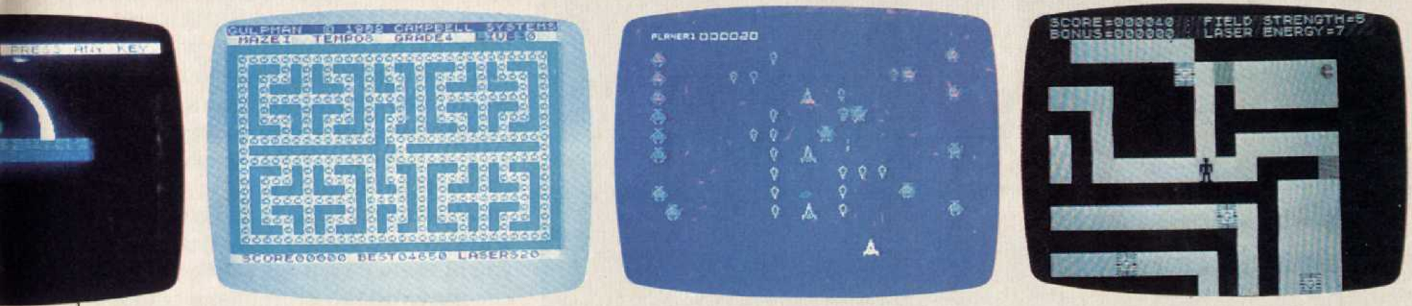
The TS 2068 features color graphics with a range of eight selectable colors. The computer permits separate control of foreground, background and border colors. Normal high-resolution graphics capability is 256 dots horizontally by 192 dots vertically. An enhanced high-resolution mode is also available that features 512 dots horizontally and 192 dots vertically.

In addition to the color graphics, this computer also has a programmable sound capability that is implemented through a built-in loudspeaker. The computer is capable of generating 130 semitones with a range of 10 octaves. It has three separate sound channels which can all be active at once and a noise generator which can be used to generate special effects such as gun shots or explosions. The BASIC used in the computer has sound commands that can vary the pitch, duration and volume of the generated sound, which makes it possible to compose music with the computer. A very useful section of the manual is a chart that shows the various musical tones and how to generate them.

Aside from the confusion

Above and across: A closeup of the new Timex keyboard; a side view of the left joystick port and an inside peek at the hide-away cartridge slot.




PRESS ANY KEY
GULPMAN CAMPBELL SYSTEMS
MAZE1 TEMPO8 GRADE4
SCORE00000 BEST04650 LASERS20
PLAYER1 000020
SCORE=000040 FIELD STRENGTH=5
BONUS=000000 LASER ENERGY=7

associated with the keyboard, the only other big weak point with the TS 2068 is its tape system. The computer uses an ordinary audio cassette tape recorder to store programs on and the system is extremely finicky. The recorder used should have a tone control, which should be set to the extreme treble position. The volume adjustment is critical. If it is set too high or too low, the tape simply won't load. The problem is so bad, that out of the six sample tape programs provided with the computer, only two of them would load properly, and even these two were exceptional because they were apparently made by hand and not mass-produced. None of the four mass-produced tapes provided would load properly. This could represent a serious problem, but the folks at Timex are trying to remedy it. With the success of the ZX Spectrum computer in Britain, which uses the same cassette tapes, it's probably only a matter of time before they have the tape bugs worked out. In the meantime there are other ways to bypass the tape.

One solution is to use a disk drive. A special micro-floppy drive is currently being developed that could not only solve the problem, but would be low-cost as well. That's not due out for some time, however. The other solution is to buy cart versions of the programs you're interested in. In addition to avoiding tape sensitivity problems, you gain the added advantage of speed because the program is instantly available.

With the initial introduction of the TS 2068 there will be 40 pieces of software available from Timex. Cassette programs will range in price from $9.95 to $19.95, while cartridge versions will be priced from $12.95 to $29.95. In addition to the programs offered by Timex, you can expect a broad range of applications from independent software developers. One reason for this is wide availablity of programs for the ZX Spectrum, which are directly compatible and will undoubtedly be imported into this country. You can expect to see some excellent graphics-oriented games for this computer, if the software I saw at a British computer show is any sample.

The versions of BASIC provided with the TS 2068 is impressive. It is an extended BASIC with a rich set of commands. Among some of the more unusual commands included are BRIGHT, which sets the brightness of characters printed to the video screen to normal, high intensity or transparent; COPY, which sends the top 22 lines of the display to a printer; INK, which sets the color (foreground) of the characters subsequently printed; PAPER, which controls the

From left to right: FLIGHT SIMULATOR, VOICE CHESS, HORACE GOES SKIING, CYBERZONE, GULPMAN, COSMI GORILLA and ANDROIDS all for the TS2068.

Video Maniac
SPORTS ACCESSORIES
"FOR THE SERIOUS VIDEO PLAYER"
VIDEO™ SPORTS GLOVE
MEN'S RIGHT XL
TAKE CONTROL!
Video Maniac

Photography by David L. Hickey

VIDEO MANIAC™ Sportswear & Accessories
for the Video-Computer Generation.
For Full Color Brochure & Decal send $1.50
to P.O. Box 2728, Capistrano Beach,
California 92624
For quick service use money order or
certified check.
DEALER INQUIRIES INVITED
California (714) 779-0270
Out-of-State (800) 252-2561

background color; OVER, which permits the overprinting of characters; PI, which gives the mathematical value of 3.14159... and more.

This version of BASIC also has special commands that make it easy to load and save data variables. In addition, it is possible to save a program together with its already entered or calculated data. And programs can be saved out and a starting line number specified, so that when they are loaded back into memory they automatically start running the program on the line indicated.

Overall, the TS 2068 makes a very favorable impression. Technically it appears to be a sturdy and well-built machine, with a very capable extended BASIC, and the price is good, although within a year it will probably drop to between $130 and $100 dollars. The two major factors that are preventing a whole-hearted recommendation of this machine are the rigid and confusing keyboard interface and the very finicky tape system. If you already own a TS 1000, you've encountered these problems before and will be able to handle them, in which case this is an excellent machine for you to step up to. If this is going to be your first computer, you might become exasperated with it, which would be a pity. The machine is quite capable once these obstacles are overcome.☐

SCREEN PLAYS

Continued from page 9

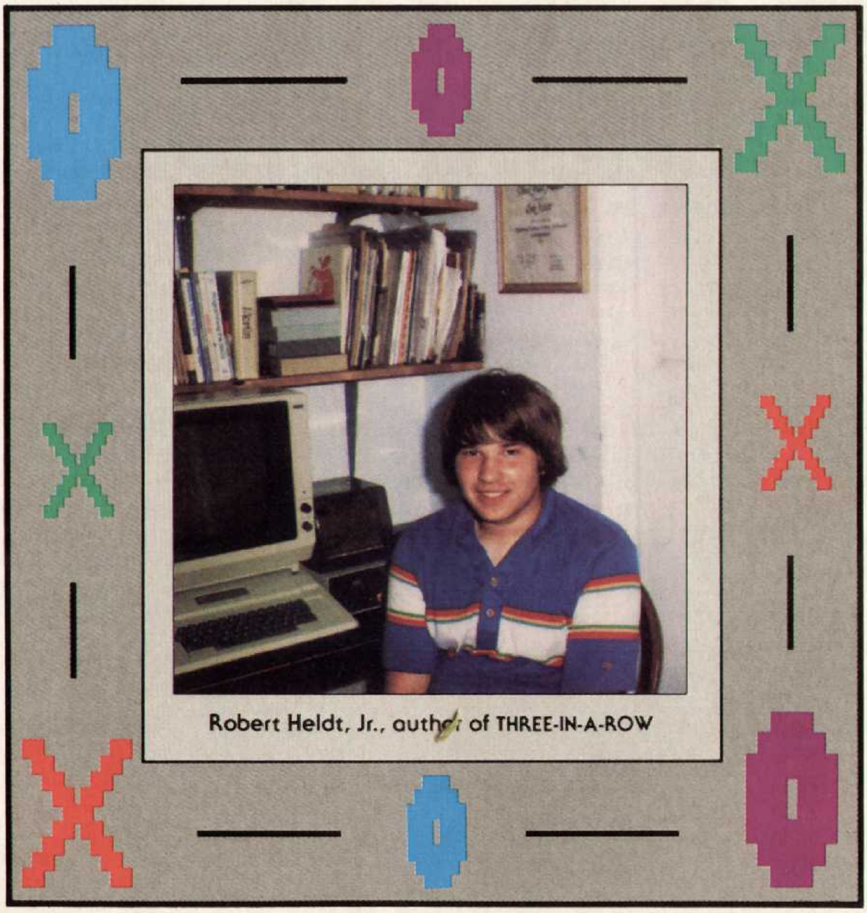
your turn to pitch, aim for the inside, close to the batter's knees. Doing this will generally prevent the opposing batter from smacking a really long ball. And pitch quickly—you have but a few seconds to adjust your stance, and if you don't get it together quickly enough to suit the computer, the pitcher will throw automatically and you'll forfeit control of the ball in flight.

When running, keep your eyes on the prompts that appear in the lower portion of the screen. These signals will tell you which buttons to press to advance or run back.

FIRST SCREENING

THREE-IN-A-ROW

We're waiting to discover you. Each month in First Screening we publish an original program by one of our readers, and if your program is published we'll send you $100. This month's winner is Robert Heldt, Jr., a 17-year-old senior at Pioneer High School in San Jose, CA. He's been programming about five years and plans to attend college in the fall to study engineering and continue his career in computers.



Robert Heldt, Jr., author of THREE-IN-A-ROW

The Game

This is the latest version of *Three-In-A-Row*, written for the Apple II Plus equipped with a disk drive.

When you first run *Three-In-A-Row* you may think it's just another version of Tic-Tac-Toe. Don't be fooled, however, By the third move it's obvious that this game is very different, because three X's and O's are all you get.

The object of *Three-In-A-Row* is to get three of your pieces in a straight row. To do this you can move your pieces around the playing board diagonally, horizontally or vertically. You can only move your piece one space at a time. Each number on the playing board corresponds to the space that is to the lower left of the number. After each game the computer will display the players' names and their respective scores.

Strategy

The reason the game requires a disk drive is that the computer uses the diskette to store the players' names and scores. So do not remove the diskette from the drive or write-protect the diskette. If you do the game will not function properly.

After playing a while, you will probably discover your own strategies for winning *Three-In-A-Row*, but don't get careless. And give a lot of thought to each move. Punch in the coordinates too quickly and your opponent will surprise you with three in a row. It's easy to miss an obvious move.

If you're smart, you'll be able to "checkmate" your opponent by maneuvering your pieces into a position which cannot be blocked.

```
200  REM  ********************
210  REM  * THREE-IN-A-ROW    *
220  REM  *  BY BOB HELDT     *
230  REM  * VERSION 1.0       *
240  REM  * COPYRIGHT 1983    *
250  REM  ********************
260  REM
270  FOR X = 0 TO 138: READ Y: POKE 24576 + X,Y: NEXT : POKE 232,0: POKE 2
     33,96
280  ROT= 0: SCALE= 3: HCOLOR= 3
290  TEXT : HOME : NOTRACE
300 A$ = "========================================"
310  FOR X = 1 TO 23: VTAB X: HTAB 1: PRINT A$
320  NEXT
330 A$ = "                        "
340  FOR X = 8 TO 14: VTAB X: HTAB 9: PRINT A$: NEXT
350  VTAB 8: HTAB 8: INVERSE : PRINT A$: VTAB 15: HTAB 8: PRINT A$
360  FOR X = 8 TO 15: VTAB X: HTAB 8: PRINT " ": VTAB X: HTAB 32: PRINT "
     ": NEXT : NORMAL
370  VTAB 10: HTAB 13: PRINT "THREE-IN-A-ROW"
380  VTAB 12: HTAB 14: PRINT "BY BOB HELDT"
390  POKE 34,23
400  VTAB 23: HTAB 6: PRINT "PRESS <SPACE BAR> TO CONTINUE"
410  VTAB 23: HTAB 37: GET A$: IF A$ <  >  CHR$ (32) THEN 410
420  ONERR  GOTO 660
430  CLEAR : TEXT : HOME
440  HOME : GOSUB 570: GOSUB 480
450  HOME
460  NORMAL
470  PRINT : GOTO 670
480 D$ =  CHR$ (4)
490  PRINT D$"OPEN  CURRENT.SCORE"
500  PRINT D$"WRITE CURRENT.SCORE"
510  PRINT NA$(1)
520  PRINT NA$(2)
530  PRINT "0"
540  PRINT "0"
550  PRINT D$"CLOSE CURRENT.SCORE"
560  RETURN
570 : HOME
580  VTAB 5: HTAB (20 - ( LEN ("ENTER PLAYERS NAMES") / 2)): PRINT "ENTER
     PLAYERS NAMES"
590  VTAB 10: HTAB 3: PRINT "PLAYER #1 ";: INPUT "";NA$(1)
600  IF  LEN (NA$(1)) > 14 THEN NA$(1) =  LEFT$ (NA$(1),14)
610  IF  LEN (NA$(1)) <  = 1 THEN NA$(1) = "": GOTO 590
620  VTAB 12: HTAB 3: PRINT "PLAYER #2 ";: INPUT "";NA$(2)
630  IF  LEN (NA$(2)) > 14 THEN NA$(2) =  LEFT$ (NA$(2),14)
640  IF  LEN (NA$(2)) <  = 1 THEN NA$(2) = "": GOTO 620
650  RETURN
660  RESUME
670  REM
680  TEXT : HOME : SPEED= 255: NOTRACE : CLEAR
690  GOSUB 1860: REM  GET NAMES
700  GOSUB 1730: REM  SET HI-RES SCREEN
710  POKE 34,22
720  REM  INPUT ROUTINE
730  FOR M = 1 TO 3
740  HOME : VTAB 23: HTAB 4: PRINT S1$;: GET A$: IF  VAL (A$) =  < 0 THEN
     740
750  VTAB 23: HTAB 4 + L1: PRINT A$
```

```
760 PL = 1
770  GOSUB 840: REM  MOVE1
780  HOME : VTAB 23: HTAB 4: PRINT S2$;: GET A$: IF  VAL (A$) <  = 0 THEN
     780
790  VTAB 23: HTAB 4 + L2: PRINT A$
800 PL = 2
810  GOSUB 840: REM  MOVE1
820  NEXT
830  GOTO 1030: REM  MAIN INPUT
840  REM  PLACE PIECES (MOVE1)
850  IF A$ = "1" THEN V = 24:H = 35
860  IF A$ = "2" THEN V = 124:H = 35
870  IF A$ = "3" THEN V = 224:H = 35
880  IF A$ = "4" THEN V = 24:H = 95
890  IF A$ = "5" THEN V = 124:H = 95
900  IF A$ = "6" THEN V = 224:H = 95
910  IF A$ = "7" THEN V = 24:H = 155
920  IF A$ = "8" THEN V = 124:H = 155
930  IF A$ = "9" THEN V = 224:H = 155
940  IF PL = 2 THEN H = H - 12:V = V + 2
950  IF MM = 1 THEN  RETURN
960  IF SP( VAL (A$)) =  > 1 AND PL = 1 THEN  POP : GOTO 740
970  IF SP( VAL (A$)) =  > 1 AND PL = 2 THEN  POP : GOTO 780
980  IF PL = 2 THEN  SCALE= 4: DRAW 4 AT V,H
990  IF PL = 1 THEN  SCALE= 3: DRAW 3 AT V,H
1000 SP( VAL (A$)) = PL
1010  GOSUB 1420: REM  CHECK FOR WINNER
1020  RETURN
1030  REM  MAIN INPUT
1040  HOME : VTAB 23: HTAB 4: PRINT S1$;: GET A$: PRINT A$: VTAB 23: HTAB
     5 + L1: PRINT "-TO-";: GET B$: PRINT B$: IF  VAL (A$) <  = 0 OR  VAL
     (B$) <  = 0 THEN 1040
1050  IF SP( VAL (A$)) <  > 1 THEN 1040
1060  IF SP( VAL (B$)) <  > 0 THEN 1040
1070 PL = 1
1080  GOSUB 1150: REM  MOVE2
1090  HOME : VTAB 23: HTAB 4: PRINT S2$;: GET A$: PRINT A$: VTAB 23: HTAB
     5 + L2: PRINT "-TO-";: GET B$: PRINT B$: IF  VAL (A$) <  = 0 OR  VAL
     (B$) <  = 0 THEN 1090
1100  IF SP( VAL (A$)) <  > 2 THEN 1090
1110  IF SP( VAL (B$)) <  > 0 THEN 1090
1120 PL = 2
1130  GOSUB 1150: REM  MOVE2
1140  GOTO 1030
1150  REM  MAIN MOVER (MOVE2)
1160 MM = 1: GOSUB 840:MM = 0
1170  IF B$ = "1" THEN V1 = 24:H1 = 35
1180  IF B$ = "2" THEN V1 = 124:H1 = 35
1190  IF B$ = "3" THEN V1 = 224:H1 = 35
1200  IF B$ = "4" THEN V1 = 24:H1 = 95
1210  IF B$ = "5" THEN V1 = 124:H1 = 95
1220  IF B$ = "6" THEN V1 = 224:H1 = 95
1230  IF B$ = "7" THEN V1 = 24:H1 = 155
1240  IF B$ = "8" THEN V1 = 124:H1 = 155
1250  IF B$ = "9" THEN V1 = 224:H1 = 155
1260  IF PL = 2 THEN H1 = H1 - 12:V1 = V1 + 2
1270  GOSUB 1330: REM  CHECK MOVE
1280 SP( VAL (A$)) = 0:SP( VAL (B$)) = PL
1290  IF PL = 1 THEN  SCALE= 3: XDRAW 3 AT V,H: DRAW 3 AT V1,H1
1300  IF PL = 2 THEN  SCALE= 4: XDRAW 4 AT V,H: DRAW 4 AT V1,H1
```

```
1310  GOSUB 1420: REM  CHECK FOR WINNER
1320  RETURN : REM  INPUT NEXT MOVE
1330  REM  CHECK MOVE
1340 A =  VAL (A$):B =  VAL (B$)
1350  IF  INT (A / 2) = A / 2 AND  INT (B / 2) = B / 2 AND PL = 1 THEN  POP
     : POP : GOTO 1040
1360  IF  INT (A / 2) = A / 2 AND  INT (B / 2) = B / 2 AND PL = 2 THEN  POP
     : POP : GOTO 1090
1370  IF  ABS (H - H1) > 71 AND PL = 1 THEN  POP : POP : GOTO 1040
1380  IF  ABS (V - V1) > 121 AND PL = 2 THEN  POP : POP : GOTO 1090
1390  IF  ABS (V - V1) > 121 AND PL = 1 THEN  POP : POP : GOTO 1040
1400  IF  ABS (H - H1) > 71 AND PL = 2 THEN  POP : POP : GOTO 1090
1410  RETURN
1420  IF SP(1) = 1 AND SP(2) = 1 AND SP(3) = 1 THEN PL = 1: POP : POP : GOTO
     1590
1430  IF SP(1) = 2 AND SP(2) = 2 AND SP(3) = 2 THEN PL = 2: POP : POP : GOTO
     1590
1440  IF SP(1) = 1 AND SP(4) = 1 AND SP(7) = 1 THEN PL = 1: POP : POP : GOTO
     1590
1450  IF SP(1) = 2 AND SP(4) = 2 AND SP(7) = 2 THEN PL = 2: POP : POP ; GOTO
     1590
1460  IF SP(1) = 1 AND SP(5) = 1 AND SP(9) = 1 THEN PL = 1: POP : POP : GOTO
     1590
1470  IF SP(1) = 2 AND SP(5) = 2 AND SP(9) = 2 THEN PL = 2: POP : POP : GOTO
     1590
1480  IF SP(2) = 2 AND SP(5) = 2 AND SP(8) = 2 THEN PL = 2: POP : POP : GOTO
     1590
1490  IF SP(2) = 1 AND SP(5) = 1 AND SP(8) = 1 THEN PL = 1: POP : POP : GOTO
     1590
1500  IF SP(3) = 1 AND SP(6) = 1 AND SP(9) = 1 THEN PL = 1: POP : POP : GOTO
     1590
1510  IF SP(3) = 2 AND SP(6) = 2 AND SP(9) = 2 THEN PL = 2: POP : POP : GOTO
     1590
1520  IF SP(3) = 2 AND SP(5) = 2 AND SP(7) = 2 THEN PL = 2: POP : POP : GOTO
     1590
1530  IF SP(3) = 1 AND SP(5) = 1 AND SP(7) = 1 THEN PL = 1: POP : POP : GOTO
     1590
1540  IF SP(4) = 2 AND SP(5) = 2 AND SP(6) = 2 THEN PL = 2: POP : POP : GOTO
     1590
1550  IF SP(4) = 1 AND SP(5) = 1 AND SP(6) = 1 THEN PL = 1: POP : POP : GOTO
     1590
1560  IF SP(7) = 1 AND SP(8) = 1 AND SP(9) = 1 THEN PL = 1: POP : POP : GOTO
     1590
1570  IF SP(7) = 2 AND SP(8) = 2 AND SP(9) = 2 THEN PL = 2: POP : POP : GOTO
     1590
1580  RETURN
1590  HOME : IF PL = 1 THEN  HOME : VTAB 23: HTAB 5: PRINT P1$;" IS THE WI
     NNER  !!!!"; CHR$ (7); CHR$ (7)
1600  IF PL = 2 THEN  HOME : VTAB 23: HTAB 5: PRINT P2$;" IS THE WINNER  !
     !!!"; CHR$ (7); CHR$ (7)
1610  FOR X = 1 TO 1750: NEXT
1620 A$ = "CURRENT.SCORE":D$ =  CHR$ (4)
1630  PRINT
1640  PRINT D$"OPEN "A$: PRINT D$"READ  "A$: INPUT P1$: INPUT P2$: INPUT S
     1: INPUT S2: PRINT D$"CLOSE"A$
1650  IF PL = 2 THEN S2 = S2 + 1
1660  IF PL = 1 THEN S1 = S1 + 1
1670  PRINT D$"OPEN "A$: PRINT D$"WRITE "A$: PRINT P1$: PRINT P2$: PRINT S
     1: PRINT S2: PRINT D$"CLOSE"A$
1680  TEXT : HOME
```

```
1690  VTAB 8: HTAB 5: PRINT P1$: VTAB 8: HTAB 35: PRINT S1
1700  VTAB 10: HTAB 5: PRINT P2$: VTAB 10: HTAB 35: PRINT S2
1710  VTAB 22: HTAB 5: PRINT "PRESS <RETURN> TO CONTINUE ";: GET A$: IF A$
     <  >  CHR$ (13) THEN 1710
1720  GOTO 670
1730  HGR : HCOLOR= 3
1740  HPLOT 40,40 TO 40,60: HPLOT 40,100 TO 40,120: HPLOT 60,20 TO 120,20:
      HPLOT 160,20 TO 220,20
1750  HPLOT 240,40 TO 240,60: HPLOT 240,100 TO 240,120: HPLOT 60,140 TO 12
     0,140: HPLOT 160,140 TO 220,140
1760  HPLOT 60,35 TO 120,65: HPLOT 160,95 TO 220,125
1770  HPLOT 220,35 TO 160,65: HPLOT 120,95 TO 60,125
1780  HPLOT 140,40 TO 140,60: HPLOT 140,100 TO 140,120
1790  HPLOT 60,80 TO 120,80: HPLOT 160,80 TO 220,80
1800  HPLOT 65.5 TO 65.15: HPLOT 165.5 TO 170.5 TO 170,10 TO 165.10 TO 165
     ,15 TO 170,15
1810  HPLOT 265,5 TO 270,5 TO 270.15 TO 265.15: HPLOT 265.10 TO 270,10
1820  HPLOT 65,65 TO 65,70 TO 70,70: HPLOT 70,65 TO 70,75: HPLOT 170,65 TO
     165,65 TO 165,70 TO 170,70 TO 170,75 TO 165,75
1830  HPLOT 265,65 TO 265,75 TO 270,75 TO 270,70 TO 265,70: HPLOT 65,125 TO
     70,125 TO 70,135
1840  HPLOT 165,125 TO 165,135 TO 170,135 TO 170,125 TO 165,125: HPLOT 165
     ,130 TO 170,130: HPLOT 270,135 TO 270,125 TO 265,125 TO 265,130 TO 27
     0,130
1850  RETURN
1860  REM  GET PLAYER NAMES
1870 A$ = "CURRENT.SCORE":D$ =  CHR$ (4)
1880  PRINT
1890  PRINT D$"OPEN "A$: PRINT D$"READ"A$: INPUT P1$: INPUT P2$: PRINT D$"
     CLOSE "A$
1900 S1$ = P1$ + "'S TURN ":S2$ = P2$ + "'S TURN "
1910 L1 =  LEN (S1$):L2 =  LEN (S2$):P1 =  LEN (P1$):P2 =  LEN (P2$)
1920  RETURN
1930  DATA   5,0,4,0,10,0,51,0,92,0,117,0,138,0,60,60,60,60,44,53,53,53,53
     ,37,37,37,37,45,62,62,62,62,46,46,46,46,62,39,39,39,39,55,55,55,55,63
     ,0,1,0,4,0,44,44,44,44,60,60,60,60,44,53,53,53,53,37,37,37,37,45,62,6
     2,62,62,46,46
1940  DATA   46,46,62,39,39,39,39,55,55,55,55,63,0,1,0,4,0,36,44,44,44,45,
     46,46,54,54,55,55,63,39,39,39,9,41,36,55,6,0,1,0,4,0,36,44,44,44,45,4
     6,46,54,54,55,55,63,39,39,39,9,41,36,55,6,0,0
```

In order for us to consider your entry, we need the following items: a complete computer program, a brief game description, photographs or drawings of the graphics, a picture of you and a self-addressed, stamped envelope. Send it all to: First Screening, Electronic Fun, *350 East 81st St., New York, NY 10028. Include your phone number so we can reach you.*

1984

Continued from page 31

consummate villain against whom the populace and Big Brother were united in hatred. Goldberg was a man they loved to hate. Hate sessions were always concluded with an image of Big Brother and a general chanting of love for him because he was the one who would put things right in the world.

One-way television is good enough for getting out your aggressions today. We've got many personalities presented to us as characters we love to hate—Howard Cosell, for example and David Susskind, and, best of all, Tom Snyder (one minute with him probably does the trick). And let's not forget the pleasure we get blasting aliens in video games.

Four crystal balls.

7. Newspeak: In the environment of *1984*, literature not only does *not* flourish, but it is being systematically destroyed because it can lead to the formulation of unorthodox (i.e. individual) thoughts. Thus, the rich language of Shakespeare and his literary successors is ruthlessly converted into a kind of basic English called Newspeak, which greatly narrows the meaning of words and also the possible range of thought. Maintaining totalitarianism in *1984* depends on decreasing communication to the lowest common denominator necessary to carry on the routine of life. Frighteningly, a character in the book remarks, "In the end we shall make thought-crime literally impossible, because there will be no words in which to express it. Every concept that can ever be needed will be expressed by exactly one word, with its meaning rigidly defined and all its subsidiary meanings rubbed out and forgotten." "Doublethink", "Thoughtcrime", and "Crimestop" are examples of Newspeak.

Language buff Edwin Newman was recently quoted as saying, "There is a serious danger that as we move into this so-called high-tech era, there will be one group of people that understands the scientific and technological work of our time, and then, the great mass of the rest of us."

Admittedly, the cryptic vocabulary of "bits" and "bytes", "ROM" and "RAM" we use to make small talk with our micros hardly wins literary kudos from the Nobel Prize committee for expressive language. "Modem", "videotex" and "debug" are just a few of the hundreds of possibly thought-condensing words created among the hallowed hills of Silicon Valley. In a too-close parallel to the book, we even have entire dictionaries devoted to electronic mumbo jumbo, or "technobabble" as it's been dubbed. Computerese can be very isolating to outsiders. Nonetheless it's here to stay, at least until we perfect English-speaking machines. This sort of jargon can be looked at in two ways, though. One, as a sort of isolation factor which separates one group from another. But there is also two—in learning hi-tech talk, you can broaden your vocabulary and, in this way, broaden rather than diminish communication by opening the door to a wide range of information and skills.

Four crystal balls for the invention of Newspeak; one for the prediction of its ultimate uses.

8. Conformity: Destruction of the individual was a major priority of Big Brother and his henchmen. Repressing human desires (both personal and economic) and discouraging the unique meant the Party could rule unhampered by possible rebels and other heretics.

Perhaps more than any other invention, the personal computer offers people choices that can lead to personal and economic self-improvement. The home work station connected to the office, for instance, lets parents care for children and still contribute to the family income. Teens make money by writing programs, or consulting for local businesses' data processing needs. Authors, producing books and articles on-line, become more productive and increase their earning potential. Computer camps and remote-based classrooms offer previously unavailable educational opportunities to learners from all walks of life.

Sorry, Mr. Orwell. No score on this one.

9. The informed elite: Orwell foresaw a state in which all information was scrupulously hoarded, homogenized and meted out by the government for limited digestion by the masses. In short, information (and the control of it) is power. People learned only what the Party wanted them to learn—no more, no less. At one point, O'Brien, the story's villain, tells Smith that two plus two equals five; this "fact" is true, he says, if the Party says so.

In 1968, a writer in *Popular Electronics* magazine (now *Computers & Electronics*) predicted that microcomputers would always be too expensive for the average consumer, and that instead, everyone would be able to purchase a small, remote terminal that plugged into one central, worldwide mainframe. In this way, the article fantasized, all users could gain access to information from a single source. As we all know, computer access is much more decentralized today, and that's good. Lack of standardization, along with free market competition among the different types and brands of computers, while sometimes inconvenient, is our best protection against one organization or group gaining control over large amounts of important information.

One crystal ball.

10. Mass Exercise: Another daily ritual in the mandatory routine of *1984* life is several minutes of calisthenics performed by every man, woman and child in front of the telescreen. The exercises were supervised by the instructress of physical education who often rebuked attendees appearing the least bit lazy: "6079 Smith, W! Yes, you! Bend lower, please! You can do better than that," she screeches at our hero during one session.

No doubt about it, Orwell was right on. Interactive videodisc or TV—take your pick: We've got Richard Simmons (truly the master of mass exercise), Jane Fonda, and for you old-timers, Jack LaLanne.

Four crystal balls.☐

FORTH

Continued from page 35

DUP means duplicate. It tells FORTH to make a copy of the number at the top of the stack, and to push that duplicate on top of the original.

DROP means drop (pop) the number at the top of the stack, making the number underneath it the new top number.

"!" means "store". It gives you a way to take a number off the stack and put it somewhere else in the computer's memory. In order to perform a store operation, you have to have the number you want to store sitting at the top of the stack. Then you take the memory "address" of the place where you want the number to go, and push that address on the stack. Once you have those two numbers on the stack—the destination address and the number itself—you perform a "!". The two numbers will be popped off the stack and the store will be completed. For example, to store the number 373 at address 4096, you would type:

373 4096 !

"@" means "fetch" a number from memory and put it on the stack. It's pretty much the reverse of store. To fetch a number you first push its memory address on the stack, then type "@". The address will be popped off and the number will be pushed in its place.

Using these words we've shown you, here's a series of commands that does something pretty simple. It takes a number from address 1024 in the computer's memory, multiplies the number times itself ("squares" it), then puts it back again at the same address.

1024 (push the address onto the stack)

@ (pop the address and replace it with the number at 1024)

DUP (make a second copy of the number)

***** (multiply the two numbers)

1024 (push the address where the new number is going)

! (store the number)

Let's get back to the idea of blocks and pyramids and demonstrate FORTH's famous extensibility by adding something new to the dictionary. Suppose you are writing a program that is going to have to square a lot of numbers, as we've just shown you how to do. You certainly wouldn't want to have to write the same set of commands over and over. In BASIC you might write a subroutine, and GOSUB to it each time you wanted to multiply a number times itself. In FORTH you can do better than that. You can create a new command called "SQUARE", and execute it each time you have number on the stack you want multiplied by itself. You would define it like this:

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION REQUIRED BY 39 U.S.C. 3685)

1. Electronic Fun with Computers and Games Magazine, Pub. No. 699-750

2. Date of filing: October 1, 1983

3. Published monthly

3A. No. of issues published annually: 12

3B. Annual subscription price: $18.00

4. Known office of publications: 350 East 81st Street, New York, NY 10028

5. and having headquarters and general business offices at 350 East 81st Street, New York, NY 10028

6. The names and addresses of the publisher, editor and managing editor are Publisher: Richard Ekstract, c/o Electronic Fun, 350 East 81st Street, New York, NY 10028; George Kopp, 350 East 81st Street, New York, NY 10028; Managing Editor: Randi Hacker, 350 East 81st Street, New York, NY 10028

7. The owner is Fun and Games Publishing, Inc., 350 East 81st Street, New York, NY 10028, stockholder owning or holding 1 percent or more of total amount of stock Richard Ekstract (none other) 350 East 81st Street, New York, NY 10028

8. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities: none

10. Extent and nature of circulation:

	Average No. Copies Each Issue During Preceding 12 Months	Actual No. Copies of Single Issue Published Nearest To Filing Date
A. Total No. Copies (Net Press Run)	256 585	269 925
B. Paid Circulation		
1. Sales through dealers and carriers, street vendors and counter sales	83 345	105 237
2. Mail subscription	11 103	29 000
C. Total Paid Circulation (Sum of 10B1 and 10B2)	94 448	134 237
D. Free distribution by mail, carrier or other means samples, complimentary, and other free copies	1 733	1 830
E. Total distribution (Sum of C and D)	96 181	136 067
F. Copies not distributed		
1. Office use, left over, unaccounted, spoiled after printing	810	670
2. Return from news agents	159 594	133 188
G. Total (Sum of E, F1 and 2—should equal net press run shown in A)	256 585	269 925

11. I certify that the statements made by me above are correct and complete. **RICHARD EKSTRACT**, Publisher

12. 39 U.S.C. 3685 provides in pertinent part: "No person who would have been entitled to mail matter under former section 4359 of this title shall mail such matter at the rates provided under this subsection unless he files annually with the Postal Service a written request for permission to mail at such rates." In accordance with the provisions of this statute I hereby request permission to mail the publication named in item 1a at the phased postage rates presently authorized by 39 U.S.C. 3685

RICHARD EKSTRACT, Publisher

WE BUY **WANTED!** WE SELL

USED VIDEO GAME CARTRIDGES

(for Atari 2600™, Colecovision & Atari 5200™)

C.O.D. Phone Orders Accepted
Dealer Inquiries Invited

JOIN OUR GAME CLUB

Prices Quoted On Phone

You MUST Send A Self Addressed Stamped Envelope To Receive Our Current Buying & Selling Price List
Print Clearly.

FOREST HILLS USED VIDEO GAME CARTRIDGES INC.

(212) 897-6100

Dept. D. 63-56 108th Street
Forest Hills, N.Y. 11375

video today

Formerly Video Heaven, Inc.

To Order by Phone Call:
616-392-2877
Lowest Prices Anywhere!

The one complete source for video games and computer software.

•ATARI•MATTEL•COLECO•
•TEXAS INSTRUMENTS•COMMODORE•APPLE•
•ACTIVISION•IMAGIC•STARPATH•VECTREX•
•MORE!•

Send .25 for complete catalog
P.O. Box 144C, Holland, Michigan 49423

: **SQUARE** (":" means define. "SQUARE" is the word to define.)

DUP (make a second copy of the number)

* (multiply the two numbers)

; (";" means end the definition)

Once you've defined the word SQUARE using the ":" command, you can use it like you use any of the 100 or so operations that FORTH comes with in its original dictionary. The word SQUARE could then replace the third and fourth lines in the program above that fetches, squares and stores numbers. You would write the new program like this:

1024 (push the address onto the stack)

@ (now the number you want to square is at stack-top.)

SQUARE

1024 (push the "destination" address)

! (store the number)

This is just a beginning. New words can be defined that replace entire programs, not just two lines of code. If you've understood most of what we've told you so far, you're certainly ready to venture FORTH. There are several books on FORTH, and we can happily recommend at least two: *Discover FORTH* by Thom Hogan (Osborne/McGraw-Hill) and *FORTH Programming* by Leo J. Scanlon (Howard W. Sams and Co. Inc.). Then you can really start pushing, popping and building.☐

MILLION

Continued from page 47

work closely with authors on projects they feel have potential. Although companies generally receive pretty advanced program submissions, some are willing to offer helpful hints and editorial input as long as something in programmed form is received. In fact, if Broderbund is enthusiastic about a program, they'll spend time working closely with the author at any level of development.

In addition to software publishers, there are currently over 60 magazines devoted to computers, and many more focusing on the video game industry. A large number of these—including such publications as *Creative Computing, Softside, Power/Play, TRS-80 Microcomputer News* and our own *Electronic Fun*—pay as much as $100 or more for programs. And many more are interested in articles on the applications of computers as well as on the future of the industry itself.

Book publishers, too are entering the computer market with increasing frequency, and it is here that software agents with their network of connections in the business, can be a big boost. You don't necessarily have to be an experienced writer to succeed; you simply have to convince the publisher that someone

TURN YOUR ATARI VIDEO COMPUTER SYSTEM INTO A STATE OF THE ART GAME SYSTEM — — — FOR THE PRICE OF A GOOD VIDEO GAME

- What is the Supercharger™?

The Supercharger™ expands the game-playing power of your Atari® VCS.™

Inside the Supercharger™ are special digital electronics which multiply the VCS RAM memory 49 times!

Plus, an audio interface cable attached to the Supercharger™ plugs into the earphone jack of any cassette tape player.

- What does it do?

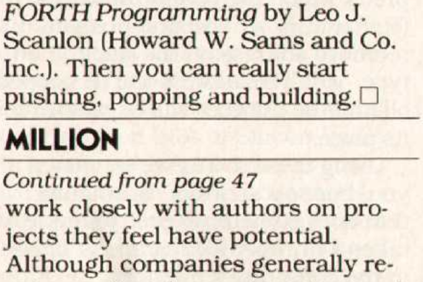
The Supercharger™ lets you play games with high resolution graphics, faster action, and far more complexity.

The Supercharger™ upgrades your VCS with state-of-the-art electronics.

Furthermore, Supercharger™ games come on economical cassette tapes, far less expensive than conventional game cartridges.

The Supercharger™ comes with the highly acclaimed and award winning Phaser Patrol™ game.

Send To:
Home Arcade Club
P.O. Box 209
Santa Clara, CA 95050
Or Call: (800) 227-6703 (Outside CA)
(800) 632-7979 (Inside CA)



STARPATH™

SuperCharger™ & Phaser Patrol™	$29.95____
Communist Mutants™	4.95____
Fireball™	4.95____
Suicide Mission™	4.95____
Killer Satellites™	4.95____
Dragonstomper™	9.95____
Mindmaster™	9.95____
Rabbit Transit™	9.95____
Official Frogger™ by Sega®	9.95____
Party Mix™	9.95____
Sword of Saros™	9.95____
Survival Island™	9.95____

Enclosed is my check for $____________ for the items marked above plus $3.00 shipping and handling. In California, add 6½% sales tax.

Name ________________________ Age ______

Address ________________________

City ________________ State ________ Zip ________

STUDENTS **MAKE** KIDS

BIG MONEY

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

SELL VIDEO GAME CARTRIDGES

...Spare Time to Friends and Neighbors
Make $50-$100-$200 Per Week!

NO MONEY NEEDED TO START
No Minimum Order • No Risk • No Age Limit
All the Newest Titles!
Over 3,000 Different Games!

Become a Part-Time Video Game Dealer. Buy all the new Video Game Cartridges at Low Dealer Wholesale Prices. Example: **DRAGONFIRE,** retail price $32.95, your cost is **$6.95.** You sell at $16.95 and make $10.00 a game — your customer saves $16.00). No money needed to start! Sell ATARI VCS, 5200, 400/800; COLECO, INTELLIVISION, APPLE, COMMODORE, TRS-80, T.I., etc. Be the first Dealer in your area. Limited Offer — **ACT NOW** for Special Dealer Kit — only **$3.95.** Dealer Kit includes everything you need to get started — Sales Manual, Ad Kit, Business Cards, Confidential Dealer Prices, and much, much more! **UNCONDITIONAL GUARANTEE** — 100% satisfaction or Full Refund.

— We Also Carry Educational Games —

★ ACT NOW For Complete Dealer Kit ★
MAIL $3.95 (plus $1.00 for shipping) TO:
GAMES CLEARINGHOUSE, INC.
DEPT. JG2, BOLTON, MASS. 01740
OR CALL:
(617) 897-5555
MasterCard VISA

out there needs the information you can provide.

A case in point is Robert Alonso, a 20-year-old Rutgers University student currently under contract to Hayden Book Co. to write a text about how to create video games; part of the book will consist of game programs he himself has developed. "This is the first time I've done anything at all like this," he says. "The fact is I've only been playing around with the computer for about a year." In addition to the Hayden deal, Robert is also a regular contributor to *Electronic Fun*.

In the end, whether you aim for a book or software outlet, selling your work takes a lot of time and perseverance—and the process, at times, can be frustrating and disappointing. "You may get turned down a number of times, but then you may just stumble across a publisher willing to take a chance," says German. "The problem is that the industry is still so new that no one can be sure of what will sell and what won't. Many fields, in fact, are not just waiting to be filled, but to be created by an innovative programmer. And in the end it just comes down to finding a software firm you can get into bed with."☐

HACKERS HELPER

Continued from page 74

```
        NEXTY
50      POKE52,28:POKE56,
        28:CLR:REM
        PROTECTS
        CHARACTER SET
55      REM ***ROUTINE TO
        MAKE  THE SCREEN
        SCROLL BACKWARD
        TWENTY TIMES***
60      FORZ=1TO20:PRINT
        " [illegible]":POKE218,158:
        FORD=1TO200:
        NEXTD:NEXTZ
65      PRINT "[illegible]":END
70      REM ***DATA FOR
        ALIEN CREATURE***
800     DATA 73,42,
        62,107,62,62,107,0
```

C-64

```
10      REM BY, ROBERT
        ALONSO — C-64
15      REM ***CLEAR
        SCREEN AND PRINT
        B'S***
20      PRINT "[illegible]
        [illegible]"
25      PRINT"B B B B B B B
        B B B B B B B B B B B
        B B"
30      POKE53272,(PEEK
        (53272)AND240)OR12
        :REM POINTER SET TO
        POINT TO 12288
35      REM ***TWO EXTRA
        C-64 STEPS***
40      POKE56334,PEEK
        (56334)AND254:REM
        TURN OFF INTER-
        RUPTS
```

Now! The greatest joysticks of them all* can be used with Colecovision and TI Computers!**

THE Champ #1 USA

You asked for it. And Championship has come through again. With two adaptors—one for Colecovision, the other for TI Computers —built to the same high standards we set for our sensational joysticks.

For Colecovision...A keypad controller, with 7 foot extension cord, makes our Champ Joysticks—or any Atari-style joystick—compatible with the Colecovision 2400.

1
2
3
4
5
6
7
8
9
*
0
#
TOP

Champ Adaptor No. 1 (CA-340)

Champ Adaptor No. 2 (PC-310)

Champ
TOP
Champ

TI Computers...One piece plug-in adaptor makes our Champ Joysticks—or any other Atari-style joystick—adaptable to the TI 99/4A computer.

See us at CES Booth #6463

Championship electronics (U.S.A.) Inc.
711 Grandview Drive
South San Francisco, CA 94080
(415) 588-3015

***The Super Champ (JC 250), the Remote Champ (RC 350) or Mini-Champ (JC351).**

****(Or any other Atari 2600 compatible joystick).**

```
45    POKE1,PEEK(1)
      AND251 :REM SWITCH
      TO CHARACTER
50    REM ***CHARACTER
      SET EXCHANGED
      FROM ROM TO
      RAM***
55    FORX=12288TO12799
      ::POKEX,PEEK(X+
      40960):NEXTX
60    REM ***TWO EXTRA
      CLOSING STEPS FOR
      C-64***
65    POKE1,PEEK(1)OR4
      :REM SWITCH TO I/O
70    POKE56334,PEEK
      (56334)OR1 :REM
      START INTERRUPTS
80    REM ***ROUTINE TO
      POKE DATA INTO LET-
      TER B***
85    FORY=12304TO12311
      :READA:POKEY,A:
      NEXTY
90    POKE52,48:POKE56,48
      :CLR:REM PROTECTS
      CHARACTER SET
95    REM ***ROUTINE TO
      MAKE THE SCREEN
      SCROLL TWENTY
      TIMES***
100   FORZ=1TO20:PRINT
      :FORD=1TO200:
      NEXTD: NEXTZ
105   PRINT"▣" END
110   REM ***DATA FOR
      ALIEN CREATURE***
800   DATA 73,42,
      62,107,62,62,107,0
900   REM THE REASON
      TWO EXTRA STEPS
      MUST
905   REM BE TAKEN ON
      THE C-64 IS BECAUSE
910   REM THE CONTROL
      REGISTERS AND ROM
915   REM CHARACTER SET
      SHARE THE SAME
920   REM MEMORY
      LOCATIONS. THESE
      LOCATIONS
925   REM MUST BE SET TO
      READ THE CHAR-
930   REM ACTERS AND
      NOT THE REGISTERS.
935   REM THE REGISTERS
      ARE NECESSARY FOR
940   REM INPUT/OUTPUT
      INTERRUPTS TO
945   REM OCCUR,
      THEREFORE THE
      INTERRUPTS
950   REM MUST ALSO BE
      TURNED OFF BEFORE
955   REM COPYING THE
      CHARACTER SET.
```

SCREENPLAYS

Continued from page 9

immediate danger. Work the four corners—the men you must rescue tend to gravitate toward these areas, and when the last man is saved you'll receive a bonus for each remaining Slayer. I also found it wise to avoid the center portion of the screen during this round, because the Glaives will only travel as far as the closest brown mound. A bonus for leftover Slayers is also offered during round four.

The beast you'll face in round five is invulnerable, though a well-placed Glaive will stun him temporarily, and his fireballs will be diffused if you hit them. My advice: move toward the beast and toss everything you've got at him right away, then run either left or right and spray him once more. ☐

INTERVIEW

Continued from page 79

and finding what's behind it.

EF: What spawned JUMPMAN JUNIOR?

RG: Well, the reason *Junior* came about was that Epyx wanted to put a similar game in a ROM cartridge because there is a much bigger player base. So I decided to try to put it in a 16K ROM. I debated whether to use 12 screens off the original *Jumpman* or come up with 12 new ones. It would also be easier to program if I was working with new concepts.

EF: Will the JUMPMAN games be con-

THE GAME EXCHANGE

featuring
- Complete line of electronic games for

ATARI INTELLIVISION
COLECO VIC 64 TI

- Over 1000 titles to choose from
- BONUS – One FREE game after 20 exchanges
- No limit on number of exchanges
- Exchange FEES starting at $1.95*
- Special purchase prices as low as $5.95*
- Quarterly newsletter
- One Year Membership — ONLY $35.00

*Plus, shipping and handling

Send $2.00 for membership information and catalog to: THE GAME EXCHANGE, VIDEO ELECTRONICS CENTER, Division of Pacific Centrex, 30 South Michigan Avenue #502, Chicago, Illinois 60603

Name________________

Address ________________

City & State____________ Zip________

Please allow 3-4 weeks for delivery.

verted to systems other than Atari and Commodore?

RG: Yes. They're already being converted to the Apple and IBM, but not by me. I've done the Atari and Commodore versions.

EF: After doing it so many times, I'm sure you were sick of the game by the time you finished the Atari version. What made you do the conversion to the C64?

RG: One of the reasons I got involved in working for a software company was to gain expertise in other systems.

EF: Are you still itching to get on to other systems?

RG: Yes, I'd like to do a game on the IBM PC. I'm not sure I ever will because it's primarily not a game machine. The Apple is getting a little old, and even though you can do some good graphics, it doesn't have a lot. What I'd really like to do is some intense graphic stuff on the Atari and improve my expertise in the generation of graphics.

EF: In June of 1983 we talked at the Consumer Electronics Show about a game of yours in progress called LUNAR OUTPOST. Here's what you said at the time: "The concept, or theme, at this point is that you are on the moon and the aliens are coming to attack Earth. You have to fight off the aliens. If you let them get by you and destroy your base on the moon, then it's goodbye Earth! Right now the basic concept calls for a map view to add some strategy, with a road network around the lunar base and the buildings spread around this network." What's changed since then?

RG: Not too much. One thing that has changed is the system. At the show the game was on the Atari 800, but a couple of weeks later we switched to doing it first on the Commodore 64. That was the big change. In basic concept the game is still the same. I'm working on it in conjunction with another programmer. I'm handling the map scene at the moment and he's working on the battle scene. We've added quite a bit of flavor to the types of ships and the configurations of their groupings and how your ship moves on the playing surface. For example, you're not restricted to moving down the roads—you simply move faster that way. Fuel is a concern, as is damage, which will slow you down or stop you altogether. When you get to the battle mode, the enemy ships will have several different characteristics.

EF: What kind of "intelligence" do the aliens possess?

RG: There will be fast and slow ones, and they will either go for you or your buildings. We hope to have a couple that will drop down and give you a hard time on the ground, which would be visually interesting as well as mix up the action.

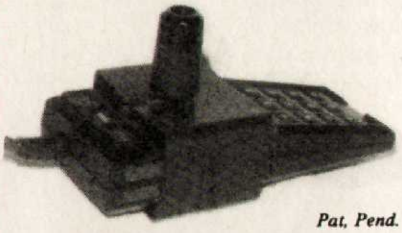
EF: What do the types of buildings have to do with the game?

RG: There are four types of buildings: One is a fueling stop, because as you drive around you'll use up fuel, and so you'll need to get back to a particular building now and then to keep your speed up. Another will be a repair building for damage to your vehicle and the other two are general types of buildings. The object of the game is to protect as many buildings as you can for as long as you can. The emphasis in playing should be on the repair and refuel buildings, but the way we're doing the point system, you'll get more points for saving the general building types. You'll want to save them for their value, but you'll also want to save what's necessary to survive.

EF: How small does the program need be to fit in a cartridge?

RG: 16K. At this point, we're designing for cartridge and we're not sure everything will fit. When it comes down to the wire, a decision will have to be made whether to sacrifice some of the game to get it in a cartridge or whether to keep the entire thing intact and put it on disk.☐

CONTROL - GUIDE™



Pat. Pend.

FOR YOUR ATARI 5200™
- Converts your ATARI 5200™ Control Stick to 4-Way Control for PAC-MAN™ and other Games.
- Attaches Easily.
- Makes Games Easier to Play.
- Only for Games that require 4-Way Control, i.e. (Up, Down, Left, Right).

SEND **$6.99** Per Pair, Plus $1.00 for Postage & Handling

ENTERTAINMENT SYSTEMS
P.O. BOX 376, OAKHURST, NJ 07755
*NJ Residents add 6% sales tax

Check or Money Order
Visa & Mastercard accepted

Name ____________
Address ____________
City ____________
State ____________ Zip ____________
Card # ____________
Expiration Date ____________

Write for Distributor information

SULLIVAN ENTERPRISES

COMMAND STAND®

Let COMMAND STAND Hold The Controller

- CURES VIDEO WRIST
- COMFORT & CONTROL
- HAND RELAXATION
- CHILD TESTED
- FUN & ENTERTAINING
- IMPROVES SKILL AND ACCURACY
- HOLD CONTROLS FIRMLY IN PLACE WITH VELCRO®
- LONGER GAME PLAY AND HIGHER SCORING
- EASY TO INTERCHANGE
- FITS ALL VIDEO PADDLES

DIMENSIONS:
Height – 22 inches
Base – 8 x 10 inches
PATENT PENDING
Made in USA

Constructed of Durable Acrylic Plastic!

MASTERCARD or VISA accecpted.
SEND CHECK OR MONEY ORDER; NO C.O.D.'s

$29.95 SET OF TWO; COMPLETE WITH VELCRO® STRIPS
JOYSTICKS NOT INCLUDED
Plus $4.50 for shipping & handling

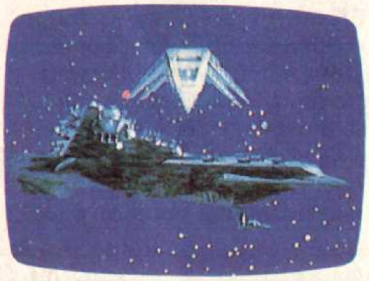
SULLIVAN ENTERPRISES
Department EF, 5714 Holland Ln., San Jose CA 95118

Name ____________
Address ____________
City ____________ State ____________
Card No: ____________ Zip ____________

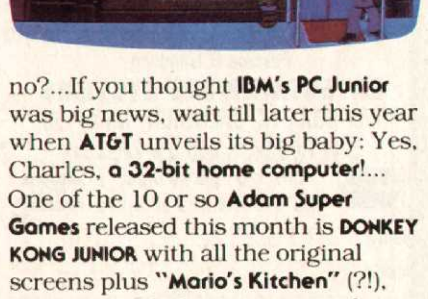
Send $1.50 for catalog.

top Secret

Le Mouche digs hard on the new coin-op **POLE POSITION**'s improved graphics and extra courses (even a practice oval, thank YOU, Atari!), but you can tell **the game's geography was Made In Japan**: cruise down the Long Beach Speedway and you'll see the town's own **Queen Mary** on one side of the track and—whaaat?—San Francisco's **Golden Gate Bridge** on the other. That's one l-o-o-o-o-n-g beach speedway, Atari-san...**Hitch Thy Dragon To A Star**: **Atari's** got its **first-ever computer adventure** game (with graphics) coming out soon. Tentative title is **DRAGONQUEST** (you'll probably see **Michael Blanchet's sneak review** of it in next month's **Hits & Missiles**), and not to be confused with **Epyx's DRAGONRIDERS OF PERN**, an action/strategy game based on the **Anne McCaffrey** SF/fantasy novel and due out right about now (you may see it first on special $2.50 preview disks Epyx is selling direct to consumers)...**The Fly's** three new **Coin-op Beauty Queens** of the month: **Entertainment Sciences' BOUNCER** (hard to tell it's NOT a laser game, the graphics are so clean); **Bally's** 3-D **DISCS OF TRON** (utterly gorgeous); and **Sega's** laser **STARBLAZER** (don't know when this'll be out in the States)...Looks like Aquarius is dead, but **Mattel** says they *are* going ahead with the **Intellivision VCS adapter, computer add-on** and **music synthesizer**...Oops, almost forgot: There were **five** Atari coin-ops with **PONG** in the title, trivia fans: **PONG, PONG DOUBLES, SUPER PONG** and **QUADRA PONG**. The fifth stumper, **PING PONG**, was a video pinball released in 1975... Remember the **Esper Machine** in the movie **Blade Runner**—that voice-operated computer that gave Replicant-chaser (and very reluctant detective) Deckard an instant hard-copy print of whatever was on the monitor? **Mitsubishi** now makes a TV set that does just about the same thing—perfect for verifying that all-time **DEFENDER** score, no?...If you thought **IBM's PC Junior** was big news, wait till later this year when **AT&T** unveils its big baby: Yes, Charles, **a 32-bit home computer**!... One of the 10 or so **Adam Super Games** released this month is **DONKEY KONG JUNIOR** with all the original screens plus **"Mario's Kitchen"** (?!), wherein the little primate tangles with some angry bread dough (double ?!)...**Fox Games** plans a release this month of their new ex-**Beatles** movie/game, **GIVE MY REGARDS TO BROAD STREET** (pending final approval by avid gamer Paul, it is said). They're also working on VCS/Coleco versions of games based on TV's **Fall Guy** and **Mr. T** (What about the rest of **A Team**?)...**EF**'s December **Gamemaker Jaron Lanier** is cooking up something wild for the C-64: **Miraculous Music Machine**. Designed for everybody from kids to Beethoven, the program lets you use standard instruments or design your own (some can even change as the music progresses), then tell the instruments to play themselves or teach a little animal orchestra how to play 'em. It's all done with highly amusing graphics, and add-on utility programs will let you **control up to six outboard synthesizers** and print out your melodies on staff paper. OK, gang, ah-one and ah-two....



DISCS OF TRON



"The Fly"

Extend your survival against alien invaders.

Maneuver through the video galaxy with the Discwasher® PointMaster™ competition joystick.

Its fighter pilot's hand grip gives you total control. The top mounted, fast action thumb trigger makes right or left handed play unearthly easy. And the PointMaster is compatible with most popular video game systems.

Survive longer against gorillas, ghouls, ghosts, dragons and alien invaders with PointMaster . . . For people who take their games seriously.™

discwasher®

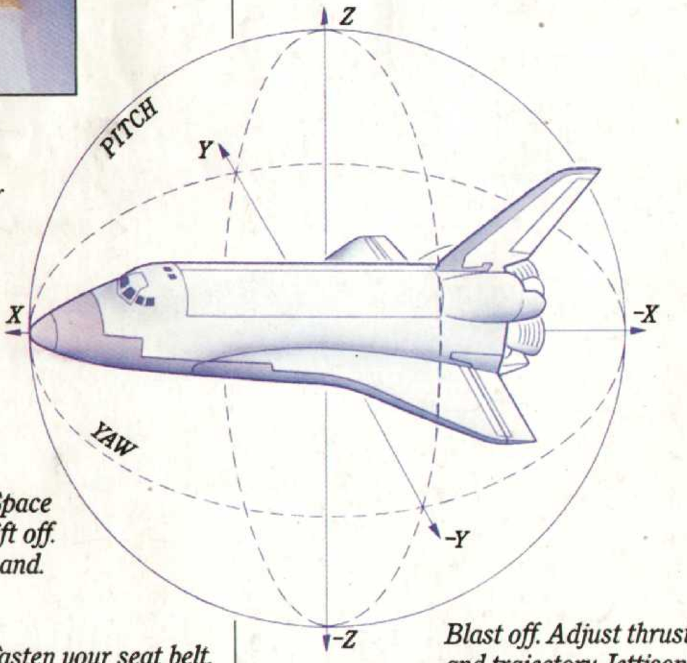
POINTMASTER™

competition joystick

DISCWASHER 1407 NORTH PROVIDENCE ROAD, P.O. BOX 6021, DEPT. EF, COLUMBIA, MO 65205 A DIVISION OF JENSEN an ESMARK Company

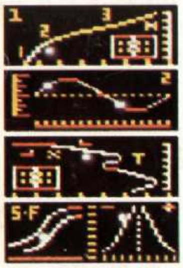
THIS IS NO GAME.

SPACE SHUTTLE– A JOURNEY INTO SPACE.™


Z
PITCH
Y
X
-X
YAW
-Y
-Z

Get ready for the most spectacular launch in video history. A new breakthrough that takes your Atari® 2600™ farther than it's ever gone before.

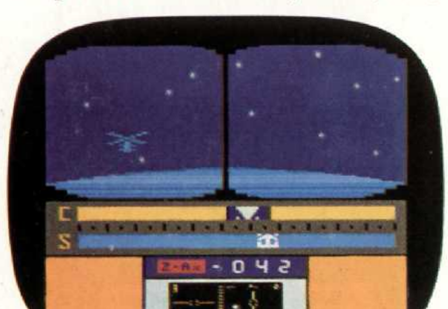
The countdown begins. The 101st mission of the U.S. Space Shuttle is about to lift off. And you're in command.

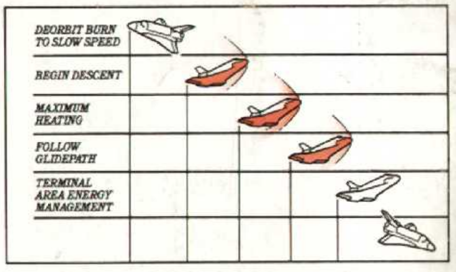


Fasten your seat belt. Take a deep breath. And prepare for an unprecedented video challenge.

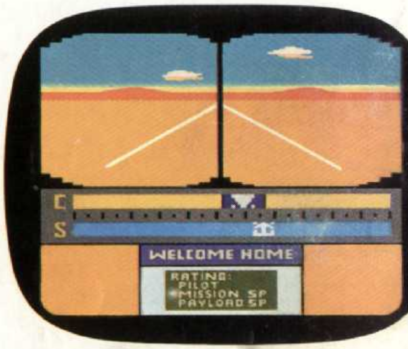
With astounding realism, you'll re-enact every phase of an actual Shuttle mission. Your Atari® 2600™ becomes a sophisticated control system that demands instant response, intense concentration, quick thinking and even quicker action.

Blast off. Adjust thrust and trajectory. Jettison first- and second-stage boosters. Check air speed. Achieve orbit. Open cargo bay




DEORBIT BURN TO SLOW SPEED
BEGIN DESCENT
MAXIMUM HEATING
FOLLOW GLIDEPATH
TERMINAL AREA ENERGY MANAGEMENT

doors. Rendezvous with a satellite. Set pitch and yaw. Re-enter the atmosphere. Lower landing gear and correct glide path.


C
S
WELCOME HOME
RATING:
PILOT
MISSION SP
PAYLOAD SP

Touch down at Edwards Air Force Base and receive your flight evaluation.

Make no mistake: it won't be easy. But once you've completed your first mission, you'll really have earned your wings.

Space Shuttle— A Journey Into Space. Designed by Steve Kitchen after consultation with NASA. It's one giant step for video.

ACTIVISION
SPACE SHUTTLE
A Journey Into Space™
FOR THE ATARI® 2600™ VIDEO COMPUTER SYSTEM™

ACTIVISION.®

We put you in the game.

For use with the Atari® 2600™ Video Computer System.™ Atari,® 2600™ and Video Computer System™ are trademarks of Atari, Inc. Also for use with Sears Tele-Games® Video Arcade.™ Tele-Games® and Video Arcade™ are trademarks of Sears, Roebuck and Co.
© 1983 Activision, Inc.